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By WILLIAM CASTIEAU,

Teacher of the Mathematics, and Maſter of the Academy, oppoſite Berner's-ſtreet, in Oxford-ſtreet.

The other Articles by Gentlemen particularly converſant in the reſpective Subjects they have undertaken to explain.

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THE MODERN
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ARTS AND SCIENCES.

☞ *Thoſe Articles which are marked thus * are totally omitted in every other Dictionary of Arts and Sciences.*

A, The firſt letter of the alphabet in Latin, Engliſh, French, and moſt of the preſent languages of Europe. It has deſervedly the firſt place on account of its ſimplicity, very little more being neceſſary to its pronunciation than opening the mouth. As a vowel it has in Engliſh a three-fold ſound: ſhort, as in *bat*, *cat*, *&c.* long, as in *dâte*, *fâte*, *lâte*, *&c.* and obſcure as in *call*, *fall*, *&c.*

In the Julian calendar, A is the firſt of the dominical letters. It was alſo of uſe in the Roman comitia, or aſſemblies, for making laws, when the people had two tables given them: on the one were the two letters, U. R. *uti rogas*, implying their aſſent; becauſe a motion for a new law was called *rogatio*: on the other the letter A, *antiquo*, or *antiquam volo*, to ſignify their diſſent. In capital caſes alſo they had two tables covered with wax, on one of which was the letter A, for *abſolvo*; and on the other C, for *condemno*: whence the former is called by Cicero *ſalutaris*, and the latter *triſtis*.

A is alſo an abbreviation, and often found in modern writers; as A. D. for *anno domini*, A. M. *artium magiſter*, maſter of arts, &c. Among logicians, A is uſed to denote an univerſal affirmative propoſition.

A, *a*, or *a a*, is uſed by phyſicians as an abbreviation of *ana*, and ſignifies an equal quantity of the ingredients that immediately precede it in the preſcription.

AAM, a meaſure for liquids uſed at Amſterdam, containing about ſixty three pounds averdupois weight.

AB, the eleventh month of the civil year of the Hebrews, and the fifth of their eccleſiaſtical year, which begins with the month Niſan. It anſwers to the moon of July; which is part of our month of the ſame name, and to the beginning of Auguſt: it conſiſts of thirty days. On the firſt of this month, the Jews faſt in memory of Aaron's death; and on the ninth of this month, becauſe on that day the temple of Solomon, and that erected after the captivity, were burnt; the former by the Chaldeans, and the latter by the Romans. The ſame day is likewiſe remarkable among the Jews for the publication of Adrian's edict, whereby they were forbid to continue in Judea, or even to look back at Jeruſalem, in order to lament the deſolation of that city. The eighteenth of the ſame month is alſo a faſt among that people; becauſe the lamp in the ſanctury was that night extinguiſhed, in the time of Ahaz.

ABACOT, the name of a cap of ſtate, formerly worn by the kings of England: the ſuperior part of it formed a double crown.

ABACUS, in architecture is the ſuperior member of the capital, to which it ſerves as a kind of crown. It was originally intended to repreſent a ſquare tile laid over a baſket, an accident which Vitruvius tells us gave occaſion to Callimachus, an ingenious ſtatuary of Athens, to invent the firſt regular order of architecture.

The abacus ſtill retains its original form in the Tuſcan, Doric, and Ionic orders: but in the Corinthian and Compoſite, its four ſides or faces are arched inwards, having ſome ornament, as a roſe, or other flower, in the middle.

ABACUS, is a term alſo uſed for a concave moulding on the capital of the Tuſcan pedeſtal And Andrea Palladio calls the Plinth above the echinus, or boultin in the Tuſcan and Doric orders by the ſame name.

ABACUS, among the ancient mathematicians, ſignified a table covered with duſt, on which they drew their diagrams; the word, in this ſenſe, being derived from the Phœnician *abak*, duſt.

ABACUS *Pythagoricus*, the common multiplication table; ſo called from its being invented by Pythagoras.

ABAFT, a naval term, ſignifies towards the ſtern. Thus, when any thing is ſaid to be abaft the mizzen-maſt, it implies that the object is between the mizzen-maſt and the ſtern.

ABAPTISTON, in ſurgery, ſignifies the perforating part of the trepan; becauſe it is prevented from ſinking ſuddenly into the ſkull and wounding the brain.

* **ABAS**, in heathen mythology, the ſon of Hypothoon and Meganira, who entertained Ceres, and offered a ſacrifice to that goddeſs; but Abas ridiculing the ceremony, and abuſing her, ſhe ſprinkled him with a certain mixture ſhe held in her cup, on which he became a water-lizard.

ABAS, a weight uſed by Perſian merchants in weighing pearls. It is one eighth leſs than the European caratt.

ABASED, *abaſſé*, in heraldry, is applied to the wings of eagles, &c. when the extremity points downwards to the point of the ſhield, or when the wings are ſhut: the natural way of bearing them being extended.

To **ABATE**, (French *abbatre*, to pull down, overthrow, or demoliſh) a term uſed by lawyers, both in an active and neutral ſenſe; as to abate a caſtle, is to beat it down. To abate a writ, is, by ſome exception, to defeat or overthrow it. A ſtranger abateth; that is, entereth upon a houſe or land void by the death of him that laſt poſſeſſed it, before the heir takes poſſeſſion, and ſo keeps him out; wherefore, as he that putteth out him in poſſeſſion is ſaid to diſſeize; ſo he that ſteppeth in between the former poſſeſſor and his heir, is ſaid to abate. In the neuter ſignification thus; the writ of the defendant ſhall abate; that is, ſhall be diſabled, fruſtrated, or overthrown. The appeal abateth by covin; that is, the accuſation is defeated by deceit.

To **ABATE**, in the manege, ſignifies the performing any downward motion properly. Thus a horſe is ſaid to abate or take down his curvets, when he puts both his hind legs to the ground at once, and obſerves the ſame exactneſs in all the times.

ABATEMENT, in heraldry, ſignifies ſomething added to a coat of arms, in order to leſſen its true dignity, and point out ſome imperfection, or ſtain, in the character of the wearer.

ABATOR, in law, is one who enters a houſe or lands void by the death of the laſt poſſeſſor, before the true heir.

ABBESS, the ſuperior of an abbey, or convent of nuns, who enjoys the ſame privileges over them as the abbots over their monks. Her ſex does not indeed allow an abbeſs to perform the ſpiritual functions annexed to the prieſthood; but there are inſtances of ſome abbeſſes who have the privilege of commiſſioning a prieſt to act for them.

ABBEY, a religious houſe or place, where perſons retire from the world to ſpend their time in ſolitude and devotion.—The wonderful eſteem ſuch men formerly acquired, procured them very large privileges, exemptions and riches, which they drew from the people by the invention of maſſes for the living and the dead, diſpenſations, jubilees, indulgencies, &c.

* **ABBEYS**, diſſolution of in England in 1536, in the reign of Henry VIII. As the monks had ſlandered Henry the Eighth in many particulars, and even debauched a great number of his ſubjects from their allegiance, he, after having deliberated with his council, ordered a general viſitation of the monaſteries, that ſtrict enquiry might be made into their titles, revenues, the morals of the friars and nuns, and the regulations obſerved in each order. By this expedient he foreſaw he ſhould be able to undeceive the public in their opinion of the ſanctity of ſuch characters, and wreak his revenge upon the monks, whom he conſiderd as his implacable enemies, and augment his revenue

with their ſpoils. Thomas Cromwell, being choſen viſitor-general, appointed ſubſtitutes for the examination of the monaſteries, where they found ſuch irregularities, and ſcenes of vice, debauchery, and impoſture, as were diſgraceful to religion, and indeed ſhocking to human nature. The examiners, who were by no means friends to monaſtic inſtitutions, did not fail to exaggerate thoſe particulars in their reports. They firſt threatened the delinquent friars and nuns with all the ſeverity of the law, and then inſinuated, that, in order to avoid puniſhment, and conceal the diſorders they had committed, they ſhould reſign their houſes to the king, who would take care to provide for the ſubſiſtence of every individual. This advice was followed by a great number of priors, with the concurrence of their monks; and the report of the commiſſioners was publiſhed, that the world might ſee there was an abſolute neceſſity for ſuch a general viſitation. Then appeared a minute detail of the moſt ſurpriſing enormities. Many convents were rent into factions, which exerciſed the moſt barbarous cruelties upon one another, as they chanced to predominate. They carried on an idolatrous traffic, by impoſing upon the ſuperſtitious people with relics and images. In ſome houſes the viſitors found the implements of clipping and coining. The majority of the nuns in many nunneries were pregnant; a great number of abbots and monks were convicted of criminal correſpondence with harlots and married women; and, not a few detected in the gratification of unnatural luſts, and other brutal practices. After this publication, the king, as the head of the Engliſh church, abſolved of their vows all the monks who had engaged in a religious life before the age of four and twenty; and permitted all the reſt to quit their monaſteries, and live as ſeculars, according to their own pleaſure. But this permiſſion producing very little effect, Henry had recourſe to other meaſures. The parliament had impowered the king to nominate two and thirty perſons, to make a collection of eccleſiaſtical conſtitutions; and now that act was confirmed. The king repreſented to the parliament in this ſeſſion, that the great number of monaſteries was an expence to the kingdom, and deſired them to apply ſome remedy to this evil: in conſequence of which remonſtrance, they paſſed an act, ſuppreſſing all monaſteries, whoſe revenues did not exceed two hundred pounds; and appropriated their income for his majeſty's uſe. By this law, the crown acquired the yearly value of two and thirty thouſand pounds, beſides a capital of above one hundred thouſand pounds, on the plate, ornaments, and effects of churches and convents. Then he erected a new court of juſtice, called the court of the augmentation of the king's revenue, for taking cognizance of all ſuch ſequeſtrations. The clergy met in convocation, propoſed, that a new tranſlation of the Bible into the Engliſh language ſhould be made, and publiſhed for the ſake of thoſe who did not underſtand Latin; and though this motion was vehemently oppoſed by Gardiner, and his party, Cranmer carried his point. The king was petitioned to employ ſome capable perſons to tranſlate the ſcriptures; the queen ſeconded the petition, with which Henry complied; and though we know not who the tranſlators were, the work was in three years, printed at Paris. Henry having obtained all he wiſhed from the parliament, diſſolved that aſſembly, after it had continued ſitting ſix years a longer term than parliament had ever ſubſiſted ſince the beginning of the Engliſh monarchy.

ABBOT, the ſuperior of an abbey or convent of monks. In the firſt ages of chriſtianity, abbots were men of great plainneſs and ſimplicity, contented with the government of their own monaſteries, without pretending to any ſhare in eccleſiaſtical affairs. But being called from theſe obſcure retreats to oppoſe the hereſies which too often appeared in the church, they became ambitious of power, and endeavoured to render themſelves independent of the biſhops. It was however ſome time before they could carry their point of independency; but having ſucceeded in that attempt, they ſoon obtained the title of lord, together with other badges of epiſcopal authority, particularly the mitre. Hence aroſe new ſpecies of diſtinctions between the abbots; thoſe were termed mitred abbots, who were priviledged to wear the mitre, and exerciſe epiſcopal authority within their reſpective precincts. Others were called croſiered abbots, from their bearing the croſier, or paſtoral ſtaff. Others were called œcumenical, or univerſal abbots, in imitation of the patriarch of Conſtantinople: while others were termed cardinal abbots, from their authority over all other abbots.

The principal diſtinctions at preſent obſerved between abbots, are thoſe of regular and commendatory. The former take the vow and wear the habit of their order: And the latter are ſeculars, hough they are obliged by their bulls to take orders when of proper age.

Before the reformation in England, there were elective and preſentative abbots, ſome who were mitred, and ſome who were not. Thoſe who were mitred had epiſcopal authority within their limits, being exempted from the juriſdiction of the biſhop; while the others wete ſubject to the dioceſan in all ſpiritual government. The mitred abbots were lords of parliament, and called abbots ſovereign and abbots general, to diſtinguiſh them from the other abbots. And as there were lords abbots, ſo there were alſo lords priors, who had exempt juriſdiction, and were likewiſe lords of parliament.

* ABBOT (George) who was archbiſhop of Canterbury, was a ſheerman's ſon, and born at Guildford in Surry, October 29, 1562. While his mother was pregnant with him, ſhe is ſaid to have had a dream, which really proved a means of his advancement: ſhe fancied ſhe was told in her ſleep, that if ſhe could eat a pike, the child ſhe was pregnant with, would prove a ſon, and riſe to preferment. Soon after this, in taking a pail of water out of the river Wey, ſhe accidentally caught a pike. This coming to the ears of ſome perſons of diſtinction, they offered to become ſponſors for the child, which was gladly accepted; and afterwards they beſtowed many favours on him when at ſchool, and at the univerſity of Oxford. He was maſter of Univerſity college, dean of Wincheſter, chancellor of Oxford, biſhop of Litchfield and Coventry, then of London; and April 9, 1611, was tranſlated to the archbiſhopric of Canterbury. Some time after this, the duke of Buckingham, who was his declared enemy, cauſed him to be ſuſpended: he was at length however reſtored, but died ſoon after, on the fourth of Auguſt 1633, aged 71 years. He was one of the eight learned divines of Oxford, to whom the care of tranſlating the New Teſtament was committed. He ſhewed himſelf in moſt circumſtances of his life, a man of great moderation to all parties, and was deſirous that the clergy ſhould attract the eſteem of the laity rather by the ſanctity of their manners than their function.

ABBREVIATURE, or ABBREVIATION, the ſubſtitution of a ſyllable, letter, or character for a whole word. It is derived from *abbrevio*, to ſhorten.

ABBREVOIR, in maſonry, certain indentures made in the joints or beds of ſtones, that the mortar or cement may, by filling theſe cavities, bind the work the firmer together.

ABBUTTALS, or ABUTTALS, (Fr. *aboutir*, to border upon) the buttings and boundings of land, either to the eaſt, weſt, north, or ſouth, ſhewing on whatever lands, &c. it abbuts. Camden obſerves, that limits were formerly diſtinguiſhed by hillocks raiſed on purpoſe, which were called botentines; whence we have the word buttings.

ABCEDARY, or ABCEDARIAN, applied to compoſitions whoſe parts are diſpoſed in alphabetical order.

ABDICATION, the action whereby a magiſtrate, or other perſon in office, renounces and gives up the ſame, before the term of ſervice is expired.

This word is often improperly confounded with reſignation, but differs from it; as abdication is done purely and ſimply; whereas reſignation is in favour of ſome other perſon. It is ſaid to be a renunciation, quitting and relinquiſhing, ſo as to have nothing further to do with a thing; or the doing of ſuch actions as are inconſiſtent with the holding of it. When king James left the kingdom, and abdicated the government, the lords would have the word deſertion made uſe of; but the commons thought it was not comprehenſive enough; as the king might then have liberty of returning.

ABDOMEN, in anatomy, that part of the human body intercepted between the thorax and the pelvis.

The word is derived from *abdo*, to hide.

Anatomiſts divide the body into three great cavities, which they call bellies: the head or the upper belly; the thorax, or the middle belly; and the abdomen, or lower belly. The abdomen, ſays Winſlow, begins immediately under the thorax, and terminates at the bottom of the pelvis of the oſſa innominata. Its circumference, or outer ſurface, is divided into regions, of which there are three anterior, viz. the epigaſtric, or ſuperior region; the umbilical, or middle region; and the hypograſtric, or lower region. There is but one poſterior region; named regio lumbaris. The epigaſtric region begins immediately under the appendix enſiformis, at a ſmall ſuperficial depreſſion, called the pit of the ſtomach, and in adult ſubjects ends above the navel, at a tranſverſe line, ſuppoſed to be drawn between the laſt falſe ribs on each ſide. This region is ſubdivided into three parts, one middle, named, epigaſtrium; and two lateral, termed hypochondria. The epigaſtrium takes in all that ſpace which lies between the falſe ribs of both ſides; and the hypochondria are the places covered by the falſe ribs. The umbilical region begins in adults, above the navel, at the tranſverſe line already mentioned, and ends below the navel at another tranſverſe line, ſuppoſed to be drawn parallel to the former, between the two criſtæ of the oſſa ilium. This region is likewiſe divided into three parts; one middle which is properly the regio umbilicalis; and two lateral, called ilia, or the flanks, and they comprehend the ſpace between the falſe ribs and the upper part of the os ilium on each ſide. The hypogaſtric region is extended downward from the inferior limit of the umbilical region, and is divided into three parts, one middle, called pubes; and two lateral, called inguina, or the groins. The lumbar region is the poſterior part of the abdomen, and comprehends all that ſpace which reaches from the loweſt ribs on each ſide, and the laſt vertebra of the back, to the os ſacrum, and neighbouring parts of the oſſa ilium. The lateral parts of this region are termed the loins; but the middle part has no proper name in men. Laſtly, the bottom of the abdomen, which anſwers to the pelvis of the ſkeleton, is terminated anteriorly by the clunes, or buttocks, and anus. The buttocks are ſeparated by a foſſa, which leads to the anus, and each buttock is terminated downward by a large fold, which diſtinguiſhes it from the reſt of the thigh. This lumbar region takes in likewiſe the muſculus quadratus lumborum on each ſide, the lower portions of the ſacrolumbares of the longiſſimi and latiſſimi dorſi, the muſculus ſacer, &c. The ſpace between the anus and the parts of generation is called perinæum, and is divided into equal lateral parts by a diſtinct line, which is longer in males than in females. The cavity of the abdomen, formed by the parts already mentioned, (all which are covered by the ſkin and membrana adipoſa) is lined on the inſide by a particular membrane, called peritonæum. It is ſeparated from the cavity of the thorax by the diaphragm, and terminated below by the muſculi levatores ani. This cavity contains the ſtomach and the inteſtines, which are commonly divided into three ſmall, named duodenum, jejunum, and ilium; and three large called cœcum, colon, and rectum. It contains likewiſe the meſentery, meſocolon, omentum, liver, gall-bladder, ſpleen, pancreas, glands of the meſentery, vaſa lactea, receptaculum chyli, kidnies, renal glands, ureters, bladder, and the internal parts of generation in both ſexes. *Winſlow's Anat.*

ABDUCTION, in ſurgery, a ſpecies of fracture, when a bone near the joint is divided tranſverſely in ſuch a manner, that the extremeties of the fractured bone recede from each other.

ABDUCTOR, a name given by anatomiſts to the following muſcles:

ABDUCTOR *Minimi Digiti Manus*, or *Abductor Auricularis*, ariſes fleſhy from the thin protuberating part of the eighth bone of the wriſt; is inſerted by a longiſh and round tendon, on the inſide of the ſhort tendon of the above deſcribed muſcle, near the upper part of the firſt bone of the little finger. It ſerves not only to abduce the little finger from the reſt, but alſo to bend it a little.

ABDUCTOR *Indicis*, ariſes broad and fleſhy from the ſuperior part of the firſt bone of the thumb; is inſerted by a ſhort tendon into the upper part of the firſt bone of the fore-finger, laterally, next the thumb. Its uſe is to bring the index towards the thumb, by drawing it from the middle finger.

ABDUCTOR *Minimi Digiti Pedis*, ariſes fleſhy and tendinous from the ſemicircular edge of a cavity, on the outſide of the inferior protuberance of the os calcis; it has another tendinous beginning from the os cuboides, and a third from the upper part of the os metatarſi minimi digiti; is inſerted into the upper part of the firſt bone of the little toe externally and laterally. Its uſe is to draw the little toe outwards from that next to it.

ABDUCTOR *Oculi*, ariſes tendinous and fleſhy from the foramen lacerum, without the orbit; is inſerted by a thin tendon into the ſclerotis, where it reſpects the great canthus. Its uſe is to move the eye outwards, from the great to the little angle.

ABDUCTOR *Pollicis Manus*, or *Thenar*, ariſes by a broad, tendinous, and fleſhy beginning from the tranſverſe ligament of the carpus, and from one of its bones that articulates with the thumb; is inſerted tendinous into the ſecond joint of digitorum manus. Its uſe is to draw the thumb from the fingers.

ABDUCTOR *Pollicis Pedis*, ariſes fleſhy from the inſide of the lower protuberance of the os calcis laterally, and tendinous from a little tubercle in the ſame bone, near the os cymbiforme. It only adheres to the other bones on the inſide of the foot, filling up the hollowneſs in the os metatarſi pollicis; is inſerted into the internal os ſeſamoideum of the firſt bone of the great toe; its tendons being farther continued upon the ſame bone laterally. Its uſe is to pull the great toe from the reſt.

ABDUCTOR *Femoris Primus*, ariſes by a ſtrong roundiſh tendon from the upper part of the os pubis next the pectinæus above the gracilis; which, turning into a compact fleſhy belly, it begins to be inſerted tendinous about the middle of the linea aſpera, being continued down upon the ſame five or ſix inches, ſending out a tendon which joins with that of the femoris quartus.

ABDUCTOR *Femoris Secundus*, ariſes from the os pubis, immediately under the gracilis, by a broad tendinous, but chiefly fleſhy beginning; and is inſerted into the linea aſpera, from a little below the leſſer trochanter, to the firſt inſertion of the laſt deſcribed muſcle.

ABDUCTOR *Femoris Tertius*, ariſes lower down than the former, from the outer edge of the os pubis and iſchium; and, running obliquely towards the trochanter minor, is inſerted near the glutæus maximus.

ABDUCTOR *Femoris Quartus*, ariſes from the protuberance of the iſchium, and the adjoining interior part of that bone, by a tendinous and fleſhy origination; is inſerted by a round and long tendon, into the upper and rough part of the inner and lower appendix of the os femoris, being affixed to that bone a little above the condyle; as alſo to ſome part of the linea aſpera.

The uſe of all theſe four muſcles is to adduce or move the thigh bone inwards, according to their different directions. *Douglas on the Muſcles.*

* ABELARD (Peter) a celebrated doctor of the twelfth century, was born at Palais near Nantz, in Britany: he was well learned in divinity, philoſophy, and the languages, but was particularly diſtinguiſhed by his ſkill in logic. He read lectures in divinity with great applauſe at Paris; where he boarded with a canon whoſe name was Fulbert, and who had a very beautiful niece named Heloiſe. The canon, anxious to ſee this young lady make a figure among the learned, made Abelard her preceptor: but inſtead of inſtructing her in the ſciences, he taught her to love; in conſequence of which ſhe became pregnant; and at Abelard's requeſt leaving her uncle, and retiring to his ſiſter in Britany, was there delivered of a ſon. To ſoften the canon's reſentment, he privately married her, and placed her in a nunnery, where ſhe did not put on the veil. Her relations, enraged at Abelard, hired ruffians, who broke into his chamber in the dead of night, and there emaſculated him. This treatment made Abelard fly to the gloom of a cloiſter; and, in order to conceal his confuſion and ſhame, he aſſumed the monaſtic habit in the abbey of St. Dennis; but the diſorders of that houſe ſoon drove him from thence. He was afterwards choſen ſuperior of the abbey of Ruis in the dioceſe of Vannes: when the nuns being expelled from the nunnery in which Heloiſe had been placed, he gave her his oratory, where ſhe ſettled with ſome of her ſiſter nuns, and became their prioreſs. He died in the priory of Marcellus at Chalons, April 21, 1142, aged ſixty-three. He left ſeveral works, but the moſt celebrated are thoſe tender letters that paſſed between him and Heloiſe, which have been tranſlated into Engliſh; and one of them rendered into verſe by the immortal Pope.

ABELIANS, a remarkable ſect of heretics who ſprung up during the reign of Arcadius, near Hippo in Africa. Their diſtinguiſhing tenet was to marry, and afterwards to live with their wives without having any carnal commerce with them.

* ABERDEEN, a maritime town in the north of Scotland, divided into two towns, the new and the old. It is the capital of the ſheriffdom of that name. The ſtreets are paved with ſtone, and at the weſt end is a little round hill, from whence iſſues a ſpring called the Spa. Over the Dee, about a mile from the city, is a bridge of ſeven ſtone arches. In the middle of the High-ſtreet is a church, well built of free ſtone; and near the port or wharf ſtands the cuſtom-houſe. It has a ſpacious market-place, and moſt of the houſes are of ſtone, chiefly four ſtories high, or more, with handſome ſaſh-windows, and gardens and orchards behind them. It is the politeſt place in the north of Scotland, for its extent, the beauty of its private and public buildings; the chief of which is the college, originally a Franciſcan monaſtery. It has a principal, four profeſſors of philoſophy, one of divinity, and one of mathematics. There is likewiſe a ſchool, with a head maſter, and three uſhers; a muſic ſchool, three hoſpitals, an alms-houſe, and a library, built at the charge of the town, and furniſhed with good books from divers benefactions. Both theſe towns together make one city, which is reckoned the third in Scotland. There is very good anchoring in the bay, from ſeven to nine fathom water; but as the channel is narrow, and the bar often ſhifts its place, there is no venturing in without a pilot.

The merchants trade to divers parts, and in particular ſend their herrings to many places in the north of Europe. There is an incredible quantity of ſalmon in theſe

Plate I. Facing Aberration.

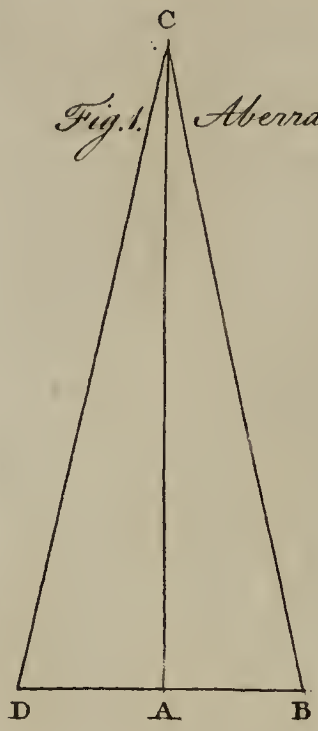


Fig.1. Aberration.

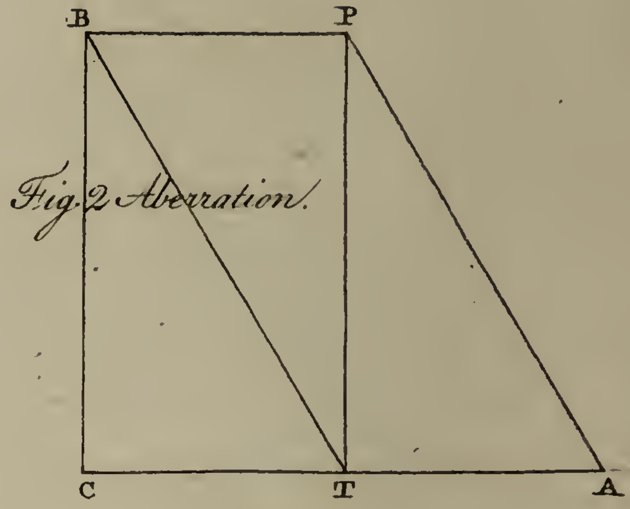


Fig.2 Aberration.

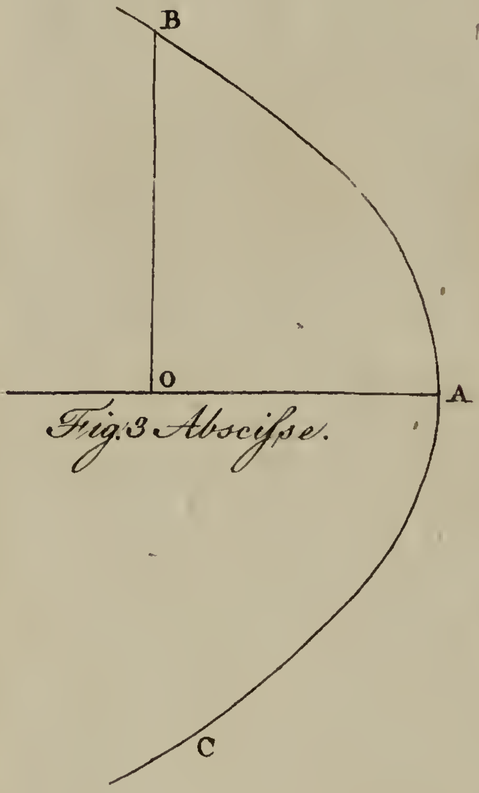
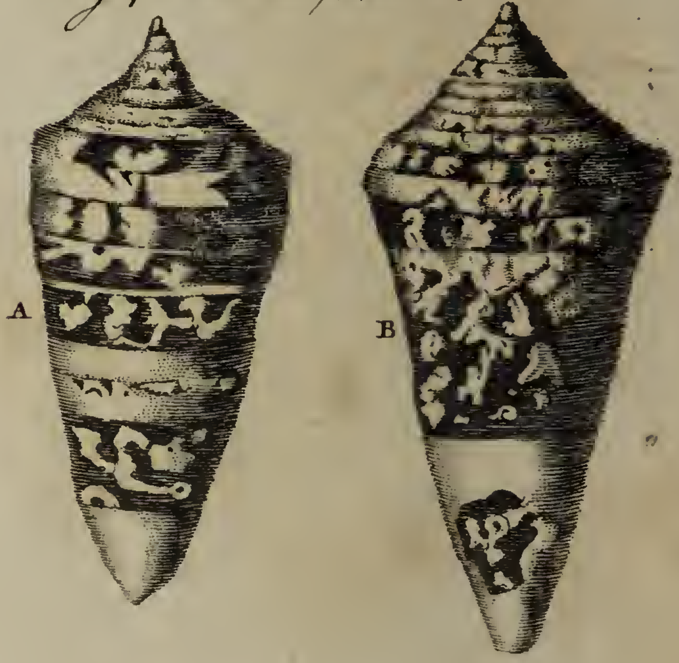


Fig.3 Absciſse.

Fig.4 Admiral Shells.



Anchor Fig.5.

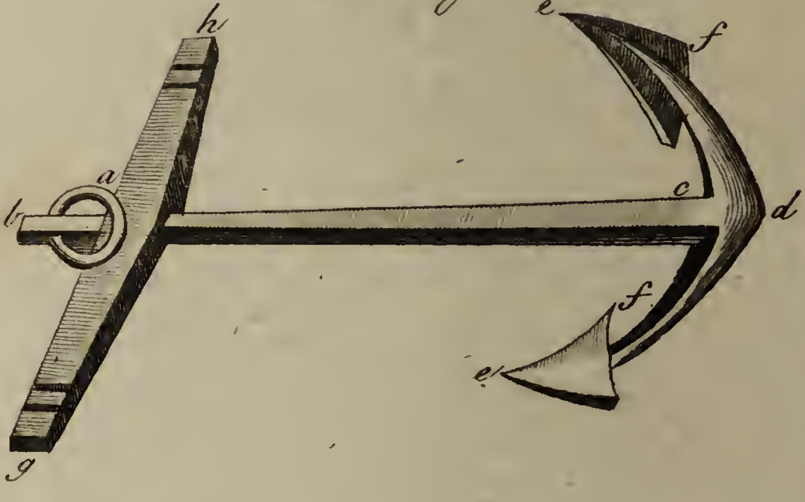
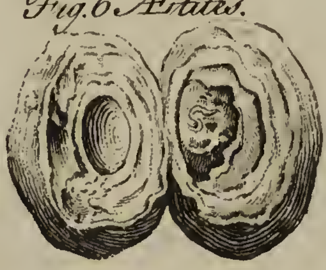


Fig.6 Ætites.



rivers, which breed in the ſhallows in autumn; at which time they caſt their ſpawn and are very poor and lean. The ſpawn in the ſpring becomes a fry of ſmall fiſh, which make their way to the ſea. Long. 1. 49. W. Lat. 57. 8.

ABERDEENSHIRE, a county in Scotland which includes Mar and other leſſer diviſions; is bounded on the ſouth by Angus, Mearns, and Gaurie; on the north-weſt by Bamffſhire; and on the eaſt by the German Ocean. The ſoil, with proper cultivation, would be ſufficiently fruitful. The hilly parts, particularly the craigs of Pennan, are covered with woods of fir and oak, and yield plenty of game and paſture, ſo that they have a great number of deer, ſheep, black cattle and horſes, They have likewiſe quarries of ſlate, limeſtone, and ſpotted marble, as alſo a ſtone peculiar to this country, called elf-arrow heads, which ſeem to be a kind of flint of different ſhapes, but all of them pointed, thin at the edges, and from half an inch to two inches long, but rough and unpoliſhed. In the rivers are muſcles, which breed a kind of pearl. The air is cool, but healthful, and their winter warmer than could be expected in ſuch a northern climate, which is owing to the vicinity of the ſea. Their firing is peat, turf and wood.

ABERRATION *of the Stars*, a ſmall apparent motion of the fixed ſtars diſcovered by the late Dr. Bradley.

The word is compounded of *ab*, from, and *erro*, to wander, becauſe the ſtars appear to wander from their true ſituation.

This noble diſcovery was accidentally made in 1725, when Mr. Molyneux and Dr. Bradley began to obſerve the bright ſtar in the head of *Draco*, marked γ by Bayer, as it paſſed near the zenith, with an inſtrument made by Mr. Graham, in order to diſcover the parallax of the earth's annual orbit, and after repeated obſervations they found this ſtar, about the beginning of March 1726, to be 20″ more ſoutherly than at the time of the firſt obſervation. It now indeed ſeemed to have arrived at its utmoſt limit ſouthward; becauſe, in ſeveral trials made about this time, no ſenſible difference was obſerved in its ſituation. By the middle of April it appeared to be returning back again toward the north, and about the beginning of June it paſſed at the ſame diſtance from the zenith as it had done in December, when it was firſt obſerved; in September it appeared 39″ more northerly than it was in March, juſt the contrary way to what it ought to appear by the annual parallax of the ſtars.

This phænomenon greatly perplexed the obſervers; and Mr. Molyneux died before the true cauſe of it was diſcovered. After which, Dr. Bradley, with another inſtrument more accurately adapted to this purpoſe, obſerved the ſame appearances not only in that but in many other ſtars; and, by the great regularity that appeared in a ſeries of obſervation made in all parts of the year, the doctor was fully ſatisfied with regard to the general laws of the phænomena; and therefore endeavoured to find out the cauſe of them. The next thing that offered itſelf, was an alteration in the direction of the plumb line, with which the inſtrument was conſtantly rectified; but this, upon trial, proved inſufficient. He then had recourſe to what refraction might do, but here alſo nothing ſatisfactory occurred. At laſt, through a moſt amazing ſagacity, this acute aſtronomer conjectured, that all the phænomena, hitherto mentioned, proceeded from the progreſſive motion of light, and the earth's annual motion in its orbit: for he perceived, that if light was propagated in time, the apparent place of a fixed object would be the ſame when the eye is at reſt, as when it is moving in any other direction, than that of the line paſſing through the eye and object; and that, when the eye is moving in different directions, the apparent place of the object would be different.

He imagined C A (plate I. *fig.* 1.) to be a ray of light, falling perpendicularly upon the line B D; then if the eye is at reſt at A, the object muſt appear in the direction A C, whether light be propagated in time, or in an inſtant. But if the eye is moving from B towards A, and light is propagated in time, with a velocity, that is, to the velocity of the eye, as C A to B A; then light moving from C to A whilſt the eye moves from B to A, that particle of it, by which the object will be diſcerned when the eye in its motion comes to A, is at C, when the eye is at B. Joining the points B, C, he ſuppoſed the line C B, to be a tube (inclined to the line B D, in the angle D B C) of ſuch a diameter as to admit of but one particle of light; then it was eaſy to conceive that the particle of light at C (by which the object muſt be ſeen when the eye, as it moves along, arrives at A) would paſs through the tube B C, if it were inclined to B D, in the angle D B C, and accompanied the eye in its motion from B to A; and that it could not come to the eye placed behind ſuch a tube, if it had any other inclination to the line B D. If, inſtead of ſuppoſing

C D ſo ſmall a tube, we imagine it to be the axis of a larger; then for the ſame reaſon, the particle of light at C cannot paſs through that axis, unleſs it be inclined to B D, in the angle C B D. In like manner, if the eye moves the contrary way, from D towards A, with the ſame velocity, then the tube muſt be inclined in the angle B D C. Therefore, although the true or real place of an object is perpendicular to the line in which the eye is moving, yet the viſible place will not be ſo, ſince that muſt doubtleſs be in the direction of the tube; but the difference between the true and apparent place will be, *cæteris paribus*, greater or leſs, according to the different proportion between the velocity of light, and that of the eye. So that if we could ſuppoſe that light was propagated in an inſtant, then there would be no difference between the real and viſible place of an object, although the eye were in motion; for, in that caſe, A C being infinite with reſpect to A B, the angle A C B (the difference between the true and viſible place) vaniſhes. But if light be propagated in time, (which will be readily allowed by moſt of the philoſophers of this age), then it is evident from the foregoing conſiderations, that there will be always a difference between the real and viſible place of an object, unleſs the eye is moving either directly towards or from the object. And in all caſes the ſine of the difference between the real and viſible place of the object, will be to the ſine of the viſible inclination of the object, or the line in which the eye is moving, as the velocity of the eye, to the velocity of light. If light moved but 1000 times faſter than the eye, and an object (ſuppoſed to be at an infinite diſtance) was really placed perpendicularly over the plane in which the eye is moving, it follows from what has been ſaid, that ſuch object's apparent place will be always inclined to that plane, in an angle of 89°, 56′ ½; ſo that it will conſtantly appear 3′ ½ from its true place, and ſeem ſo much leſs inclined to the plane, that way towards which the eye tends; that is, if A C is to A B, or A D, as 1000 to 1, the angle A B C will be 89° 56′ ½, and A C B = 3 ½ and B C D = 2 A C B = 7′, if the direction of the eye's motion is at one time contrary to what it is at another.

If the earth revolve round the ſun annually, and the velocity of light were to the velocity of the earth's motion in its orbit, (ſuppoſing it circular as it nearly is), as 1000 to 1; then it is eaſy to conceive that a ſtar really placed in the very pole of the ecliptic, would to an eye carried along with the earth, ſeem to change its place continually, and, neglecting the ſmall difference on account of the earth's diurnal revolution on its axis, would ſeem to deſcribe a circle round that pole, every way diſtant therefrom 3′ ½; ſo that its longitude would be varied through all the points of the ecliptic, every year; but its latitude would always remain the ſame. Its right aſcenſion would alſo change, and its declination, according to the different ſituation of the ſun in reſpect of the equinoctial points, and its apparent diſtance from the north pole of the equator, would be 7′ leſs at the autumnal than at the vernal equinox. The greateſt alteration of the place of a ſtar in the pole of the ecliptic (or which in effect amounts to the ſame, the proportion between the velocity of light and the earth's motion in its orbit) being known, it will not be difficult to find what would be the difference upon this account, between the true and apparent place of any other ſtar at any time; and, on the contrary, the difference between the true and apparent place being given, the proportion between the velocity of light and the earth's motion in its orbit may be found.

ABERRATION *of the Planets*. The aberration which the motion of light produces on the planets, is ſometimes more conſiderable than that of the fixed ſtars; for Mercury's aberration in his ſuperior conjunctions with the ſun, ſometimes amounts to 55″: however, aberration of the planets is reducible to this one principle, which is extremely ſimple. *It is always equal to the geocentric motion of the planet, during the time which light takes up in coming from the planet to us*; which may be demonſtrated in the following manner. It is well known that an impreſſion, or force acting, according to the diagonal of a parrallelogram, is equivalent to two forces or impreſſions, according to its two ſides. It is alſo known, that the motion of a planet ſeen from the earth, or the motion of the earth ſeen from a planet, are perfectly the ſame; ſo that if a planet appears to move one degree a day to an inhabitant of our earth, the earth appears to an inhabitant of that planet to move juſt one degree alſo, in the ſame time. This ſuppoſed; let P (plate I. *fig*. 2.) be the planet, which we will regard as immoveable, A P T the apparent motion of the planet tranſlated to the earth: in the interval of time in which light comes from P to T, the earth having advanced from A to T, is ſtruck by the ray of light according to the direction P T, and alſo ſtrikes the ray according to the direction A T, with the ſame velocity and the ſame force as if the ray itſelf had met the eye with the velocity C T; thus the eye receives two impreſſions of the light, one according to P T, the other according to C T; and ſo by a ſingle impreſſion, compounded of the two others, it refers the planet to the diagonal B T: but the angle P T B is equal to the angle A P T, which we have taken equal to the geocentric motion of the planet; therefore the aberration is equal to the motion, which the planet has during the time which light takes up in coming from the planet to the ſpectator's eye. For example, light takes up $8' 7'' \frac{1}{2}$ of time, in coming from the ſun to us, the ſun's motion in longitude, during that interval, is $20''$ of a degree, whence it follows, that the ſun has conſtantly $20''$ of aberration in longitude: and, as the aberration cauſes the planet to appear on the ſame ſide the earth is going, and oppoſite that towards which the planet appears to be moving, it follows, that if the longitude, for example, of a planet be increaſing, the aberration muſt diminiſh it; the ſame holds good of latitude, right aſcenſion, and declination.

ABERRATION *in Optics*, a diſperſion of the rays of light, reflected by a ſpherical ſpeculum, or refracted by a ſpherical lens, in conſequence whereof they cannot unite in one and the ſame focal point. This aberration as ariſing from two different cauſes, is of two kinds, the one owing to the figure of the ſpeculum or lens, the other to unequal refrangibilities in the rays themſelves; the diſcovery of which was made by Sir Iſaac Newton; and therefore this latter ſpecies is ſometimes called by writers of optics, the Newtonian aberration of rays. See the articles Speculum, Lens, and Focus.

ABETTOR, in law, one who incites, ſtirs up, counſels, adviſes, or procures others to commit a crime.

The word is formed from the Saxon *a*, an energetical article, and *betan*, to ſtir up or excite.

ABEYANCE, in law, is ſomething that exiſts in expectation only. Thus if lands be leaſed to A. B. for life, with remainder to another perſon for years, the remainder for years is in *abeyance* till the death of the leſſee.

ABIB, the name of the firſt month of the eccleſiaſtical year among the Hebrews. It began at the vernal equinox, and anſwers to part of our March and April.

The word is Hebrew, and ſignifies *an ear of corn*; the corn being then ripe in Paleſtine. Abraham, who was a practical aſtronomer, brought the Chaldæan, or orignal year of the world, into Canaan; but ſettling among the Canaanites, it is probable uſed their year, which commenced about the autumnal equinox. Abraham, however, preſerved the memory of the epocha of the Chaldean year in his family, and amongſt his poſterity. When the Iſraelites went into Egypt they uſed the Egyptian year, which had the ſame epocha with the Phœnician; but at their exodus, or going out of Egypt, they were commanded by God to begin the year at the original epocha of it, the vernal equinox, and to uſe this epocha only in their ſacred inſtitutions, their feaſts, faſts, and other religious matters: but in civil affairs they ſtill retained the epocha of the Egyptian year. So that the eccleſiaſtical year began at the vernal equinox, and all their ſacred rites were regulated by it: while the Sabbatical and Jubilean years began at the autumnal equinox; but the months were counted from the vernal equinox only. Hence the month *Abib*, or *Niſan*, which before was the ſeventh month, was by God's particular command to Moſes, reckoned the firſt month of the year; and that which had been called the firſt, was termed the ſeventh month. Hence the Chaldee paraphraſt on the 1 Kings, chap. viii. 3. ſays, the month Ethanim, which was called by the ancients the firſt, is now called the ſeventh.

ABIES, in botany, the fir-tree. See Fir-tree.

ABINTESTATE, in the civil law, a perſon who inherits from a perſon that died inteſtate, or without a will.

ABJURATION, the act of renouncing or denying a thing on oath. Thus the abjuration of hereſy is the ſolemn renunciation of ſome doctrine, as wicked, falſe, or erroneous. It is compounded of *ab*, againſt, and *juro*, to ſwear.

ABJURATION, in law, implies a ſworn baniſhment, as an oath taken to forſake the realm for ever.

ABLAQUEATION, in gardening, the act of taking the earth from the roots of trees, in order to expoſe thoſe parts to the immediate influence of the ſun, air, and rain. Modern gardeners call it *baring of trees*. The word is formed from *ab*, and *lacus*, a ditch.

ABLATIVE, in grammar, is the ſixth caſe of Latin nouns.

It is formed from *auferro*, to take away.

This caſe is peculiar to the Latin language, and is oppoſed to the dative caſe, becauſe the former expreſſes the action of taking away, and the latter of giving.

ABLUENTS, in medicine, the ſame as diluents, or ſuch as carry off acrimonious and ſtimulating ſalts from the ſtomach and bowels.

ABLUTION, the act of waſhing or purifying the body with water, a ceremony uſed among the ancient Romans, and is ſtill practiſed with the utmoſt ſtrictneſs by the Mahometans. It is uſed in the church of Rome to ſignify the little wine and water which the communicants formerly drank after the hoſt.

ABLUTION, in pharmacy, the waſhing or purifying a body by frequent effuſions of warm, or any other proper fluid.

ABOLITION, the deſtroying or reducing a thing to nothing. In law, it ſignifies the eraſing any particular from the memory, ſo as no farther proſecution may enſue.

ABOMASUS, or Abomaſum, the fourth ſtomach of a beaſt that ruminates or chews the cud. The firſt is called venter, the ſecond reticulum, the third omaſus, and the fourth abomaſus. The abomaſus is that commonly called the maw, where the chyle is formed, and from whence the food deſcends to the inteſtines.

ABOMINATION, a term uſed in ſcripture reſpecting the Hebrews, who, being ſhepherds, are ſaid to have been an abomination to the Egyptians; becauſe they ſacrificed the ſacred animal of that people, ſuch as oxen, ſheep, &c. which the Egyptians eſteemed as abominations. The term is alſo applied in the ſacred writings to idolatry and idols. The *abomination of deſolation*, foretold by the prophet Daniel, is ſuppoſed to mean the ſtatue of Jupiter Olympius, which Antiochus Epiphanes cauſed to be placed in the temple of Jeruſalem. And the *abomination of deſolation*, mentioned by the Evangeliſts, ſignifies the enſigns of the Romans, during the laſt ſiege of Jeruſalem by Titus, on which the figures of their gods and emperors were embroidered, and placed upon the temple after it was taken.

ABORIGINES, the original or firſt inhabitants of any country; but more parlarly uſed to ſignify the ancient inhabitants of Latium, a part of Italy now called Romania.

ABORTION, in phyſic, a ſpaſmodico-convulſive motion of the uterus, by which an immature and dead fœtus is violently excluded.

An abortion moſt commonly happens between the ſecond and third month; ſometimes between the third and fourth; and ſometimes, but more rarely between the fifth and ſixth month of pregnancy, about the time that the menſes were wont to flow.

The ſigns of approaching abortion are not unlike thoſe of a natural birth. In both caſes there is a ſhivering and coldneſs; a preſſing pain in the loins, extending itſelf to the pelvis; then it proceeds to the os ſacrum, coxendix, and groin, with a ſtronger pulſation of the arteries; the os uteri is moiſt and relaxed, and a water, like the waſhing of fleſh, breaks forth. Particularly in an abortion there is much blood with great weakneſs; ſometimes fainting, and on the third day the fœtus is expelled. There often precedes a ſudden rigour and horror, with laſſitude, in-appetence, nauſea. palpitation of the heart, a pain in the loins, a heavy pain about the pubes, and the genital parts are cold. The greater the fœtus is, the more ſharp are the ſpaſms, and pains and ſymptons as well as the danger are the greater. *Hoffman.*

The forerunners of an abortion according to Aſtruc, are a pain in the loins, or rather in the bottom of the uterus; a dull heavy pain in the inward parts of the thighs; ſlight ſhivering between the fleſh and the ſkin; the belly, from being eminent and pointed above the navel, becomes flat and depreſſed; the infant is motionleſs; the breaſts ſubſide and become flaccid; a ſmall flux of blood or ſerum oozes from the uterus, and is ſucceeded by an efflux of the waters, flooding, &c. with acute colic pains in the uterus from its convulſive contraction; a pain about the os pubis, and os ſacrum, from the falling down of the fœtus to the orifice of the uterus; a deſire of going to ſtool; then follow weakneſs, convulſive contractions by conſent of parts, a ſyncope, and other ſymptoms. *Aſtruc.*—Women that abound with blood often have their menſes in the ſecond and third month of pregnancy, without any bad ſymptons. In this caſe the blood, which proceeds from the veſſels of the vagina, yields relief; I have known it happen in the middle of the pregnancy, without detriment to the fœtus. The moſt violent drugs will not procure abortion in ſome women. I have known ſome afflicted with acute fevers, the ſmall-pox, meaſles, diarrhœas, and even dyſenteries, and yet the fœtus has remained ſafe and ſound. Others have travelled night and day in mountainous countries, or have been greatly fatigued with exceſſive dancing, without any harm. Nor do ſudden fires, or other terrifying accidents, cauſe many abortions, if any at all. However, women full of blood, inactive, ſoft, fat, of a more ſubtle habit of body, who live high, are weakly, of greater ſenſibility, hyſteric, inordinate in their menſes, who have miſcarried, or whoſe mothers were prone thereto, are more liable to abortion than robuſt, ſtrong fleſhy women of the loweſt claſs, who are not fat but inured to labour, and not apt to be terrified on every ſlight occaſion. *Hoffman.*

To prevent abortion, bleeding is uſeful and neceſſary about the end of the third month of pregnancy. When there are gentle pains in the loins, deſcending to the hips and os ſacrum, then bleeding in the upper parts is abſolutely neceſſary. The body, in the firſt month eſpecially, ſhould be kept open with manna, rhubarb, or the like.

ABORTION is uſed, though ſomewhat improperly, to ſignify a fœtus, which, dying in the womb, continues there beyond the time of geſtation.

ABORTIVE, in general, is applied to whatever comes before its legitimate time, or to a deſign which miſcarries.

ABRADATES, King of Suſa, in Perſia, celebrated for the tender affection of his wife Panthea. That princeſs was taken priſoner in a battle which Cyrus the Great, fought againſt the Aſſyrians, and was deſigned for the embraces of that monarch: but, notwithſtanding her exquiſite beauty, Cyrus gave her the moſt honourable treatment, without once offering to violate her chaſtity. Panthea, charmed with Cyrus's virtue, prevailed on Abradates to come over with his troops to him; and he being admitted into the conqueror's preſence, offered him his ſervice, which he readily accepted. Panthea then equipped her huſband for the fight, exhorted him to behave courageouſly, and took a tender farewell. Abradates fought with the utmoſt intrepidity, but preſſing with too much eagerneſs upon the Egyptian ſquadrons, was thrown from his chariot, and being unaſſiſted by his friends, periſhed in the field. His corpſe was found by Panthea, who had it put into her own ſedan, and brought to the river Pactolus; where, while her eunuchs and ſlaves were digging his grave, ſhe herſelf ſat on the ground, and, with his head in her lap, dreſſed him with all the ornaments ſhe had about her. Cyrus hearing this melancholy news, came to the place where Panthea was thus employed, and the mournful ſpectacle drew tears from his eyes. He ſpoke to her in the moſt tender terms; he took hold of Abradate's hand, which had been cut through with an Egyptian ſpear, and it came off into his. This circumſtance aggravated the grief of Cyrus; but as for Panthea, ſhe was inconſolable; ſhe took the hand from Cyrus, kiſſed it, and fixing it to the place from whence it had been disjointed, cried, “The reſt, O Cyrus! “ is as this.” She continued her tender lamentations, while Cyrus wept in ſilence; but he at laſt endeavoured to comfort her, by telling her that due honour ſhould be paid him at his funeral, and that ſhe ſhould be conveyed whitherſoever ſhe pleaſed. The king then leaving her, ſhe commanded her eunuchs to withdraw, and reſolving to die, bid the only attendant ſhe would ſuffer to ſtay with her to cover her and Abradates, after ſhe was dead, with the ſame cloth; and then taking a Perſian ſcymeter, ſhe plunged into into her ſide, and reclining her head on her huſband's breaſt, expired: upon which her three eunuchs alſo ſtabbed themſelves. Cyrus made a magnificent funeral for them, and afterwards erected a ſtately mauſoleum on the ſpot which was the ſcene of this fatal cataſtrophe. This happened five hundred and forty-eight years before the Chriſtian æra.

ABRAHAMITES, an order of monks, in the ninth century who were exterminated by Theophilus for the worſhip of images. It is alſo the name of a ſect of heretics, who renewed the errors of the Paulicians.

ABRASION, in phyſic, a ſuperficial exulceration of the membranous parts, attended with the loſs of ſubſtance.

ABRIDGEMENT, an epitome, ſummary, or ſubſtance of a diſcourſe, in which only the eſſential part is preſerved. Abridgements are very uſeful for thoſe who have neither leiſure to conſult the originals, nor ability to purchaſe them. But then they ſhould convey a thorough knowledge of the matter treated of, and become what a miniature painting is to a picture drawn at full lenght. We may give a general idea of an extenſive hiſtory, or other matter; but we ſhould not enter upon a detail which we cannot explain, and of which we can only convey a confuſed notion, without yielding inſtruction, or reviving any ideas the reader had before acquired.

ABRIDGEMENT is uſed to expreſs a ſhort or contracted method of writing by uſing the initial letter, or ſome contraction of the word for the word itſelf; as *hon.* for honourable, *rev.* for reverend, A. D. for *anno domini*, *&c.* In Latin epiſtles we commonly find S. P. D. *ſalutem plurimam dicit*; and in inſcriptions, D. V. C. *dicat vovet conſecrat*.

ABRIDGEMENT, in mathematics, is uſed for the reducing a compound equation to a more ſimple form of expreſſion, by repreſenting all the known quantities of the ſame term by one ſingle letter.

Thus in the equation $x^3 - ax^2 + abx - abc = 0$, by putting $-a = n$, $ab = p$, $abc = q$, inſtead of the equation firſt propoſed, we have this more ſimple but equivalent one $x^3 - nx^2 + px - q = 0$.

ABROGATION, the act of aboliſhing or totally repealing a law.

ABROTANUM *Mas*, in the materia medica, a plant known by the name of ſouthernwood. It has ſmall woody branches; numerous greyiſh green leaves divided into ſlender ſegments; and ſmall, yellow, naked, diſcous flowers, hanging downwards, in cluſters, along the ſides of the ſtalks and branches. This plant is a native of open mountainous places in the warmer climates. With us it is raiſed in gardens from ſlips or cuttings, ſeldom producing ſeeds, and not often flowers. The leaves fall off in the winter; the roots and ſtalks are perennial. The leaves and tops of ſouthernwood have a ſtrong ſmell, to many people agreeable, and a nauſeous penetrating bitteriſh taſte; they loſe a little by drying, both of their taſte and ſmell. The flowers are ſomewhat weaker than the leaves. The cortical part of the younger roots has a light, and not an ungrateful bitterneſs, with little or nothing of the peculiar flavour of the herb. *Lewis's Hiſtory of the Materia Medica.*

ABROTANUM *Femina*, the name of a plant called in England, lavender cotton. It is a buſhy ſhrubby plant, all over hoary; with oblong ſlender leaves, compoſed each of four rows of little knobs ſet along a middle rib; and naked, diſcous, yellow flowers ſtanding ſolitary on the tops of the ſtalks. It is a native of the ſouthern parts of Europe; flowers in our gardens from June to near the end of ſummer; and holds its leaves all the winter. This plant is ſuppoſed to agree in virtue with the abrotanum *Mas*, and to be the moſt effectual of the two as an anthelmintic. It has been cuſtomary among the common people to uſe, in this intention, a decoction of the leaves made in milk, which receives from them a thick conſiſtence, and a ſtrong though not very diſagreeable taſte. On careful examination, the two abrotana appeared to differ very conſiderably in quality. The femina is in ſmell weaker and leſs agreeable than the mas: in taſte nauſeous and acrid, but void of the penetrating bitterneſs which prevails in the other. Infuſions, tinctures, and extracts prepared from the femina, are more unpleaſant than thoſe of the mas, though not bitter. The eſſential oils of the two plants, and of conſequenſe their diſtilled waters and ſpirits, approach nearer in flavour to one another, though not entirely alike. Theſe differences, doubtleſs, affect their virtues as internal medicines. Nevertheleſs, for fomentations, which is the principal uſe that either of them is applied to in the preſent practice, they may be looked upon as very nearly alike: hence the college of phyſicians at London, under the name abrotanum, allow either the mas or femina to be taken indifferently. *Lewis's Hiſtory of the Materia Medica.*

ABROTONITES, a wine recommended by Dioſcorides impregnated with abrotanum or ſouthernwood: it is a diuretic, and good in diſorders of the ſtomach, loſs of appetite, and in the jaundice.

ABSCENDENTIA, in ſurgery, decayed parts of the body, which, in a morbid ſtate, are ſeparated from the ſound, or loſe that union which was preſerved in a natural ſtate of health.

ABSCESS, in ſurgery, is a tumor containing pus or purulent matter.

Abſceſſes are the conſequences of an inflammation: the ripening of abſceſſes is promoted by means of cataplaſms, poultices, &c. The exceſſive heat of the tumor and the throbbing pains which are felt, attended by a fever, are ſigns that the inflammation will terminate in ſuppuration; the irregular ſhiverings, which come on upon the heightening of theſe ſymptoms, denote that the ſuppuration is forming: the abſceſs is formed when the matter is turned into pus: the diminution of the tenſion, fever, pain, and heat, together with a ceſſation of the throbbing, are rational ſigns; and the ſoftening of the tumour and fluctuation are ſenſible ſigns which foretel that termination. Abſceſſes are opened by cauſtics or inciſion, and cannot be cured but by an evacuation of the pus: but in critical tumors, which are ſometimes occaſioned by malignant fevers, cauſtics are to be preferred. The application of a cauſtic fixes the humour in the part where nature ſeems to have depoſited it, and hinders reſorption, which would be dangerous, and oftentimes mortal. Cauſtics diſpoſe the part to a plentiful ſuppuration, and accelerate the formation of it; and, with this view, are uſed before the maturation is perfect; they are likewiſe applied to ſuch tumors as form themſelves ſlowly, and by congeſtion, as well as to thoſe which form in the ſhape of a cone, and whoſe circumference is hard, ſo that the converſion of the humour into pus would be either difficult or impoſſible, without their aſſiſtance. To open a tumour by a cauſtic, it is neceſſary that it ſhould be covered with a plaſter, in the middle whereof is left an orifice of ſuch a ſize as may be judged moſt convenient, and in which a proper potential cautery muſt be put, in order to be applied to the ſkin; if the cauſtic be ſolid, it muſt be wetted before it is applied. The whole is to be covered with another plaſter, proper compreſſes, and a retentive bandage. In about five or ſix hours, when, according to the activity of the cauſtic, it is judged that the eſchar muſt be formed, and dreſſings are taken off, and the eſchar divided, from one end to the other, with a biſtoury; in the doing of which great care is to be taken to go down as low as the pus: after the operation, the wound is dreſſed with digeſtives; and the eſchar ſeparates in a few days with a plentiful ſupperation. In common caſes of abſceſſes, it is beſt to divide the eſchar with an inciſion knife, obſerving to plunge it into the center of the abſceſs. When the whole length of the abſceſs is opened, the finger is introduced into its cavity; and if there be any membranes which form partitions, and divide the abſceſs into ſeveral cellulæ, they muſt be cut with the point of the ſciſſars, or with the biſtoury. In all theſe caſes, the inſtruments muſt be conducted by the end of the finger, for fear of injuring any of the parts which may be taken for membranes without that precaution: if the ſkin is very thin, it muſt be cut off with the ſciſſars or the biſtoury; though the latter inſtrument is preferable, as it occaſions leſs pain, and renders the operation quicker. The inciſion ſhould be always made at the loweſt part of the abſceſs, and the ſkin ſpared as much as poſſible, on which account counter openings are often made when the abſceſs is very large.

ABSCISSE, or Abscissa, in mathematics, any part of the diameter or axis of a curve, contained between its vertex or ſome other fixed point, and the interſection of an ordinate. Such is the line A O (Plate I. *fig.* 3.) contained between the vertex A of the curve B A C, and the ordinate B O. The word is derived from *abſcindere*, to cut off. In the parabola, the abſciſſe is a third proportional to the parameter and the ordinate, and the parameter is a third proportional to the abſciſſe of the ordinate. In the ellipſis, the ſquare of the ordinate is equal to the rectangle under the parameter and the abſciſſe, leſſened by another rectangle under the ſaid abſciſſe, and a fourth proportional to the axis, the parameter, and the abſciſſe. In the hyperbola the ſquares of the ordinates are as the rectangles of the abſciſſe by another line compounded of the abſciſſe and the tranſverſe axis. In theſe two propoſitions relating to the ellipſis and the hyperbola, the origin of the abſciſſes, or the point A, from whence they begin to be reckoned, is ſuppoſed to be the vertex of the curve, or, which amounts to the ſame, the point where the axis meets it: for if the origin of the abſciſſes be taken from the center, as is often done, then the two foregoing theorems no longer hold good.

ABSCISION, in ſurgery, is uſed to expreſs the dividing any corrupted and uſeleſs part of the body from the ſound, by means of ſome ſharp inſtrument; it is principally applied to the ſoft and fleſhy parts of the body; for this operation, with regard to the bones, is uſually ſtiled amputation.

ABSCISION, in rhetoric, a figure of ſpeech, whereby the ſpeaker ſtops ſhort in the middle of his diſcourſe.

ABSINTHITES *Vinum*, wine of wormwood.

ABSINTHIUM, wormwood, in the materia medica, a perennial plant, with large winged and ſerrated leaves, of a ſtrong, pungent ſmell. In the beginning of July it throws out ſeveral ligneous, ſtriated, hoary ſtalks, two or three feet high, ſet with ſmall leaves, having at the top a ſpike of ſmall flowers of a pale yellow, growing many together, each incloſed in a ſmall ſquamous calix, containing very ſmall ſeeds.

The abſinthium vulgare, or common wormwood, generally grows by the ſides of highways and foot-paths; but the abſinthium Romanum is propagated in gardens, by parting the plant every ſecond year, and planting the ſlips in rows at about three feet diſtance.

Of this plant there are only four ſorts uſed in medicine, viz. *the great or Roman wormwood, the ſmall ſort or Pontic, ſea wormwood*, and the *abſinthium Alpinum*. Beſides theſe, botaniſts make twenty-eight other kinds.

This plant is ordered in the jaundice, cachexy, and green ſickneſs; it kills worms and ſtrengthens the ſtomach: but is, like moſt other bitters, bad for the nerves. Several medicinal compoſitions are prepared from this plant; and, among others, the *abſinthites, vinum*, or wormwood wine. To make it, take four pounds of the tops of each of the two firſt kinds of abſinthium or wormwood when freſh and in bloom; cleanſe, and either mince or bruiſe them, and put them together, with three drachms of powdered cinnamon, into a barrel which will contain fifty quarts: fill the barrel with muſt, freſh expreſſed from the white grape, and ſet the barrel into a cellar, leaving the wine to ferment: when the fermentation is over, fill up the caſk with white wine, bottle it, and keep it for uſe.

A more expeditious receipt for making *vinum abſinthites,* at any time.

Take the dried leaves of the two ſorts of wormwood, of each ſix drachms, and pour thereon two quarts of white wine; then put them together into a large bottle, and ſet them in the cool to macerate twenty-four hours; then, having ſqueezed out the leaves thoroughly, filtrate the liquor, and you will have a vinum abſinthites which you may keep for uſe.

ABSOLUTE, implies ſomething that ſubſiſts independently of others. The word is compounded of *ab,* and *ſolvo,* to releaſe.

ABSOLUTE *Equation,* in aſtronomy, the aggregate of the optic and eccentric equations. The apparent inequality of a planet's motion ariſing from its not being equally diſtant from the earth at all times, is called its optic equation, and would ſubſiſt even if the planet's real motion were uniform. The eccentric inequality is cauſed by the planet's motion being uniform. To illuſtrate which, conceive the ſun to move, or to appear to move in the circumference of a circle, in whoſe center the earth is placed. It is manifeſt, that if the ſun moves uniformly in this circle, it muſt appear to move uniformly to a ſpectator on the earth, and in this caſe there will be no optic nor eccentric equation: but ſuppoſe the earth to be placed out of the center of the circle, and then, though the ſun's motion ſhould be really uniform, it would not appear to be ſo, being ſeen from the earth: and in this caſe there would be an optic equation, without an eccentric one. Imagine farther, the ſun's orbit to be not circular but elliptic, and the earth in its focus; it will be full as evident that the ſun cannot appear to have an uniform motion in ſuch eclipſe; ſo that his motion will then be ſubject to two equations; that is, the optic equation, and the eccentric equation. See EQUATION.

ABSOLUTE *Government* is that government wherein the prince is left ſolely to his own will, not being limited by any laws. When the Danes, in 1670, made their king abſolute, they declared he was abſolved from his coronation oath.

ABSOLUTE *Gravity,* in phyſics, implies the whole force by which a body is argued downwards. See GRAVITY.

ABSOLUTE *Number,* in algebra, is a known quantity which poſſeſſes one intire part or ſide of an equation, being the product of the unknown roots in any equation. So in the equation $xx + 16x = 36$, the abſolute number is 36, being equal to the ſquare of the unknown root x added to 16 times x. Alſo in this cubic equation $x^3 + 20x^2 - 10x = 100$, the abſolute number is 100, being equal to the whole other ſide of the equation $x^3 + 20x^2 - 10x$. This is what Vieta calls *homogeneum comparationis.* See EQUATION.

ABSOLUTE, in metaphyſics, implies a being that exiſts by neceſſity of its own nature. In which ſenſe God alone is abſolute.

ABSOLUTE is alſo an epithet applied to things that are free from limitations or conditions.

ABSOLUTION, the act of pardoning or forgiving. It is granted either by a prince or magiſtrate, and ſtops the execution of juſtice.

ABSOLUTION, in civil law, is a judgment or ſentence, whereby the party accuſed is declared innocent, and ſaved from the puniſhment inflicted by the laws for the commiſſion of the crime with which he was charged.

ABSOLUTION, in the canon law, a juridical act, whereby the prieſt declares the ſins of ſuch as are penitent remitted.

ABSORBENTS, in the healing art, a general name for ſuch medicines as have the power of imbibing the ſuperfluous humours in the ſtomach or inteſtines. All the teſtaceous powders, chalks, earths, calcined bones, &c. are medicines of this kind.

The word is compounded of *ab,* and *ſorbeo,* to drink. Abſorbents are uſually given when the abſorbent humours are of the acid kind. Among this numerous claſs of remedies, there is not perhaps one equal to the magneſia alba; becauſe it not only abſorbs the acid juices, but alſo by its gentle purgative quality, carries the offending matter off by ſtool.

ABSORBENT *Veſſels,* in anatomy, thoſe veſſels which abſorb the juices of the body. Thus the lacteals are called abſorbent veſſels, becauſe they abſorb the chyle. The cutaneous veſſels are called by the ſame name, from their abſorbing a part of the water of baths, fomentations, &c.

ABSTEMIOUS, an epithet applied to thoſe who uſe a ſpare diet, eſpecially to thoſe that abſtain from wine and all other fermented liquors.

ABSTENTION, in the medical art, is uſed to expreſs a ſuppreſſion or retention.

ABSTERGENTS, in phyſic, remedies of a ſaponaceous nature, capable of diſſolving reſinous concretions.

ABSTINENCE, the act of refraining from certain enjoyments; particularly from immoderate eating and drinking.

ABSTINENCE, in phyſic, implies a privation from all ſucculent aliments. Though abſtinence is not ſufficient for the cure of diſeaſes, it wonderfully aſſiſts the operation of medicines, and is a ſure preſervative againſt many diſorders. We ſhould regulate the quantity of aliments we take, by the loſs of ſubſtance ſuſtained by means of exerciſe, and the time in which perſpiration is more or leſs plentiful; at the ſame time we ſhould be careful to abſtain from ſuch aliments as we have obſerved to diſagree with us. According to Dr. Cheyne, moſt of the chronical diſeaſes, the infirmities of old age, and the ſhort lives of Engliſhmen, are owing to repletion; and may be either cured, prevented, or remedied by abſtinence.

ABSTRACT, an epithet implying that thoſe particulars are ſeparated from all other things by an operation of the mind called abſtraction. See ABSTRACTION.

ABSTRACT *Ideas*, the ideas or notions we acquire of ſome general quality or property, conſidered ſimple in itſelf, without the leaſt regard to any particular ſubject.

ABSTRACT *Mathematics*, otherwiſe called pure mathematics, is that which treats of magnitude or quantity, abſolutely and generally conſidered, without reſtriction to any ſpecies of particular magnitude; ſuch as arithmetic and geometry; in this ſenſe, abſtract mathematics is oppoſed to mixed mathematics, wherein ſimple and abſtract properties, and the relations of quantities primitively conſidered in pure mathematics, are applied to ſenſible objects, and by that means become intermixed with phyſical conſiderations; ſuch as hydroſtatics, optics, navigation, &c.

ABSTRACT *Numbers* are aſſemblages of units, conſidered in themſelves, without denoting any particular and determined particulars. Thus 8 is an abſtract number, when not applied to any thing; but if we ſay 8 feet, 8 becomes a concrete number.

ABSTRACT *Terms*, in logic, are thoſe which denote objects exiſting in the imagination only. Thus *beauty* and *uglineſs* are abſtract terms. There are ſome objects that appear beautiful to us; and, others that affect us in a diſagreeable manner: the former we ſtile beautiful and the other ugly, though there are no ſuch real ſubſtances in nature as beauty and uglineſs; they ſubſiſt entirely in the imagination.

ABSTRACT, uſed as a ſubſtantive, implies a general view or analyſis of ſome larger work.

ABSTRACTION, in phyſic, implies that operation of the mind, whereby it forms by reflection from the ſenſible impreſſions of external objects or ſome internal affection, a ſingular conception, independently of all other ideas. As we have no other method of communicating our thoughts than that of ſpeech, neceſſity and cuſtom induced us to give names both to real objects, and metaphyſical conceptions; and thoſe names have greatly contributed towards enabling us to diſtinguiſh theſe conceptions. The uniform ſenſation, for inſtance, that all white objects excite in us, has led us to give the ſame qualified names to each of theſe objects; we ſay each of them in particular, that it is white, and afterwards, in order to denote the point wherein all theſe objects reſemble one another, we have coined the word whiteneſs; therefore there are, in fact, ſuch objects as we call white; but there is not, except in our imagination, any being which we term whiteneſs. Thus whiteneſs is only an abſtract term; it is the produce of our reflection, owing to the uniformities of particular impreſſions, that ſeveral white objects have made on us; it is the point to which we refer all thoſe impreſſions which are different on account of their particular cauſe and uniform in regard to their kind. Abſtract ideas are then as it were the point to which we refer the different impreſſions, or particular reflections which are of the ſame kind, and from whence we remove all that is not preciſely ſo. Such is man: he is a living being, capable of feeling, thinking, judging, reaſoning, willing, diſtinguiſhing every ſingle act of each of theſe faculties, and by thoſe means of making abſtractions. A common name has been given to all individuals that reſemble each other, and this is called by the name of ſpecies, becauſe it agrees with every individual of one kind. Mark is man, and Luke is man; Alexander and Cæſar were men. In this ſenſe the name ſpecies is only an adjective like beautiful, good, true, &c. and upon that account there is no article joined with it. But if we regard the man, without making any particular application of the word, then the man is taken in an abſtract ſenſe, and becomes one ſpecific individual, and for that reaſon it is that the article is added; and thus it is that we ſay the beautiful, the good, the true. Theſe ſimple ſpecific abſtracts have not however been obſerved; from man has been formed humanity; from beautiful, beauty; and ſo of others.

The cuſtom we daily have of giving names to the objects of ideas, which repreſent real ſubſtances to us, has induced us to give them likewiſe, by way of imitation, to the metaphyſical objects of abſtract ideas, of which we have a conception; and hence it is that we ſpeak of them in the ſame manner as we do of real objects.

Illuſion, figure, and falſhood, have a language in common with truth. The expreſſions which we ourſelves make uſe of to convey to others either the ideas which we have within ourſelves of real objects, or of ſuch as are but ſimple abſtractions of our mind, have a perfect analogy with one another. We ſay death, ſickneſs, imagination, idea, &c. as we ſay, the ſun, the moon, &c. though death, ſickneſs, idea, &c. are not exiſting ſubſtances: and we ſpeak of the phœnix, chimera, ſphinx, and the philoſopher's ſtone, in the ſame manner as we ſpeak either of the lion, panther, rhinoceros, Africa, or Peru. Even proſe, though with leſs ornament than poetry, realizes and forms perſons of theſe abſtract beings, and equally miſleads the imagination. If Malherbe has ſaid, that death has its terrors, that he ſtops his ears, that he leaves us to cry out, &c. do not our proſe writers always uſe ſimilar expreſſions, that death reſpects no one: to wait for death, the martyrs have dared death, have ſought death; to meet death without emotion, the image of death, to face death; death does not ſurpriſe a wiſe man; neither have we a more popular expreſſion, than that death is never ſatisfied, or that death is never in the wrong. The heathens realized love, diſcord, fear, ſilence, health, &c. and made ſo many divinities of them. And nothing is more common with us than to realize an employment, place, or dignity: we make perſons of reaſon, taſte, genius, temper, and the paſſions of humour; character, virtues, and vices; churches, kingdoms, and cities; as well as of the mind, heart, fortune, misfortune, reputation, and nature. The real beings which ſurround us, are moved and governed in ſuch a manner as is known to God alone, and according to thoſe laws which he thought fit to eſtabliſh when he created the world: thus God is a real term, but nature is only a metaphyſical one. Although a muſical inſtrument, upon the touching of its ſtrings, in itſelf receives but a ſimple modification, when it gives the ſound re or ſol; yet we ſpeak of theſe ſounds as if they were ſo many real beings: and in the manner that we ſpeak of our dreams, imaginations, ideas, pleaſures, &c. as if we actually dwelt in a real and phyſical country. And in truth, if we may uſe the expreſſion, we actually ſpeak the language of the country of abſtractions.

Phyſical terms are of uſe to ſhew that we ſpeak of real objects; whereas a metaphyſical name denotes that we ſpeak only of ſome particular conception of our mind: and therefore when we ſay the ſun, the earth, the ſea; that man, that horſe, that ſtone, &c. our own experience, as well as the concurrence of the juſteſt motives, perſuade us, that there are ſuch real objects as the ſun, earth, &c. and that if theſe objects were not real, our forefathers would never have coined thoſe names, nor ſhould we have adopted them: ſo when we ſay, the nature, fortune, proſperity, health, ſickneſs death, &c. the vulgar, by imitation, believe that there is, independently of thier manner of thinking, ſome being which we call nature, another ſtiled fortune, and ſo on: for they do not imagine that all men would ſay, the nature, fortune, life, death, &c. when there was no ſuch real object as nature, fortune, &c. as if we could have neither conceptions or imaginations, unleſs there had been real objects which were the exemplars of them. In truth, we cannot have theſe conceptions, unleſs ſomething real gives us room to form them; but the word which expreſſes conception has not, except within ourſelves, any proper exemplar.

Finally, if we would avoid abſtract terms, we muſt be obliged to have recourſe to circumlocutions and paraphraſes, which enervate the diſcourſe. Beſides, theſe terms fix the mind; they aſſiſt us in introducing order and preciſion in our thoughts, give grace and energy to diſcourſe, render it more lively, compact, and forcible; and in ſhort, highly deſerve that we ſhould be acquainted with their juſt value. Abſtractions are in diſcourſe what certain ſigns are in arithmetic, algebra, and aſtronomy: but when we do not attend to their value, or to give or take them for what they are really worth, they miſguide the mind from the reality of things, and ſo become the ſource of a multiplicity of errors. We would therefore adviſe, that, in the didactic ſtyle, that is, when we are teaching and inſtructing, we ſhould make uſe of abſtract terms and figurative expreſſions, with the greateſt circumſpection.

ABSTRUSE, ſomething deep, hidden, concealed, or far removed from common apprehenſions, and not eaſily underſtood; what is not obvious and palpable. It is formed from the Latin *abſtruſus.*

Thus metaphyſics is an abſtruſe ſcience; and the doctrine of fluxions, and the method de maximis and minimis are abſtruſe points of knowledge.

ABSURD, an epithet applied to things that oppoſe the human apprehenſion, and contradict a manifeſt truth. Thus, it would

would be abſurd to ſay that five and five make only eight. When the term abſurd is applied to actions, it has the ſame import as ridiculous.

Reductio ad ABSURDUM, a method of proving the truth of a propoſition, by ſhewing that the contrary is abſurd. This method of reaſoning is freely uſed by Euclid in his Elements of Geometry.

ABSURDITY, a ridiculous impropriety, or ſomething that oppoſes an evident truth or principle.

ABSYRTES, in heathen mythology, the ſon of Æta and Hypſea, and brother of Medea. Medea running away with Jaſon, after her having aſſiſted him in carrying off the golden fleece was purſued by her father; when, to ſtop his progreſs, ſhe tore Abſyrtes in pieces, and ſcattered his limbs in his way.

ABTHANES, a title of honour uſed by the ancient inhabitants of Scotland, who called their nobles *thanes*, which in the old Saxon ſignifies *King's miniſters*; and of theſe the higher rank were ſtiled *abthanes*, and thoſe of the lower *underthanes*.

ABUSE, implies the perverting ſomething from its genuine or original intention. Thus an abuſe of words is the uſing them without any clear and diſtinct ideas.

ABUTILON, in botany, the name of a plant with a monopetalous, campiform flower, very open and indented; from the bottom there ariſes a pyramidal fiſtula, generally charged with ſtamina. The piſtil adheres to the calyx, and is fixed like a nail in the lower part of the flower and fiſtula. The piſtil becomes a fruit, reſembling the capital of a column, and is compoſed of ſeveral ſmall capſulæ placed round an axis, each capſulæ being inſerted into the ſtria of the axis. Theſe capſula open in two parts, and contain kidney-ſhaped ſeeds. *Tournefort*.

ABYSS, ſomething very profound, and as it were bottomleſs. The word is originally formed from the Greek.

Abyſs is alſo uſed to denote an immenſe cavern of the earth, where God collected all thoſe waters on the third day; which, in our verſion, is rendered the deep, and elſewhere the great deep. In Holy Scripture abyſs is made uſe of to expreſs hell, the greateſt deeps of the ſea, and the chaos that was covered with darkneſs at the beginning of the world, and upon which the ſpirit of God moved or was carried, Gen. ch. 1. v. 2. The ancient Hebrews believed as the major part of the eaſtern people do to this day, that the abyſs, ſea, and heavens, encompaſſed the whole earth; which, ſay they, was as it were plunged into and floated upon the abyſs, pretty much as a melon ſwims half above and half below water. They likewiſe believe that the earth was founded upon the waters, or at leaſt that it had its foundation in the abyſs. Under the waters, and at the bottom of this abyſs, it is that the ſcriptures repreſent to us the giants groaning and ſuffering puniſhment for their crimes. There it is that the Rephaims, thoſe ancient giants, who in their life-times made mankind tremble, are confined. In ſhort, it is within theſe dark dungeons that the prophets ſhew us the kings of Tyre, Babylon, and of Egypt, who are there buried, and yet live to expiate their pride and cruelties. We are likewiſe told that theſe abyſſes are the habitations of devils and the wicked. I ſaw, ſays St. John, in the Revelations, a ſtar fall from Heaven; and to him was given the key of the pits of the abyſs, or of the bottomleſs pit. *Calmet's Dict.*

*ABYSSINIA, is a kingdom: bounded on the north by Nubia, on the eaſt by the Arabic Gulph or Red Sea, and the kingdom of Adel; on the ſouth by the kingdoms of Ajan, Alaba, and Gingiro; and on the weſt by the kingdom of Goram, and part of Gingiro. The principal river is the Nile, and the moſt conſiderable lake that of Dambea, which diſcharges itſelf into the Nile, and is about ſeven hundred miles in length, and ninety in breadth. The air is temperate in the mountains; but in the vallies it is hot and ſuffocating. The earth is of different kinds. In ſome places there are nothing but rocks and caverns; in others the land is exceeding fruitful, and the banks of theſe ſtreams are bordered with flowers of various kinds, many of which are unknown in Europe. They have two crops in a year at leaſt, and have ſome wheat, barley, maiz, and pulſe; likewiſe abundance of ginger, cardamums, cotton, flax, ſugar, honey, wax, and vines. Their common drink is mead and metheglin. There are mines of gold, ſilver, copper, iron, and lead, but they are generally neglected. However, it is ſaid that they work a gold mine that is well guarded with ſoldiers; and the torrents in the rainy ſeaſon waſh a great deal of that metal from the mountains. This ſeaſon begins in May, when the ſun is vertical, or directly over their heads, and ends in September: this is the cauſe of the overflowing of the Nile, which ſo much puzzled the ancients. The moſt uſeful mines are thoſe of rock-ſalt: when they have procured any large pieces, they cut it into bars of different ſizes, which they uſe inſtead of money;

and with this and unſtampt gold they carry on their traffic. This country produces a great variety of animals, ſuch as lions, tigers, rhinoceroſes, leopards, elephants, monkeys, ſtags, deer, and ſeveral ſorts of game. Here are likewiſe oſtriches, and a great variety of birds, beſides horſes, camels, dromedaries, goats, cows, and ſheep. In the lakes there is the hippotamus, or ſea-horſe, which is an animal that lives in the water as well as on the land: it reſembles an ox in ſome things, but is much larger, and weighs near one thouſand ſix hundred pounds; here are likewiſe crocodiles in the rivers, and a great variety of venomous reptiles. There is a peculiar kind of bees, which are ſmall, black, and without a ſting; they hive in the earth, and make honey and wax that are extremely white. They are greatly infeſted with locuſts, which devour every thing green wherever they come. Beſides the large towns, there are a great number of villages, which in ſome places are ſo thick ſown, that they look like one continued town; the houſes are very mean, being but one ſtory high, and built of ſtraw, earth, and lime. The government is monarchical, and the ſovereign is an abſolute prince. When he is in camp, the tents are ſo regularly diſpoſed that you might miſtake it for a city; and there is a captain over every diviſion, to prevent diſorders and execute juſtice. The Abyſſins in general are of an olive complexion, tall, graceful, and well featured; thoſe that are neither mechanics, tradeſmen, nor tillers of the ground, are inured to bear arms, which are a head-piece, a buckler, a coat of mail, bows and arrows, darts, pikes capped with iron at both ends, a ſling, and a ſword: they have very few fire-arms, and theſe were introduced by the Portugueſe. The habit of perſons of quality is a ſilken veſt, or fine cotton, with a kind of ſcarf. The citizens have the ſame habit, only coarſer. The common people have nothing but a pair of cotton drawers, and a ſcarf which covers the reſt of their body. The women are of a healthy conſtitution, active, and moderately handſome, having neither flat noſes nor thick lips, like the negroes. Their religion allows the men but one wife; but they often break through that rule, and are willing to think it is not binding. Princeſſes of the royal blood are not permitted to marry foreigners; and when they take the air, they go in great ſtate, with four or five hundred women attendants. The language of the Abyſſins is the Ethiopic, which bears a great affinity with the Arabic. The religion of the country is the Chriſtian, though there are Jews, Mahometans and Pagans in divers parts, but not every where tolerated. The particular tenets of the Abyſſins are partly conformable to the Eutychians, and partly peculiar to themſelves. They believe that Jeſus Chriſt has but one nature, which is the divine, and his humanity is entirely ſwallowed up in the divinity. They deny tranſubſtantiation, purgatory, extreme unction, images in churches, the celibacy of the clergy, and auricular confeſſion. In ſome things they conform to the Jewiſh religion, uſing circumciſion as well as baptiſm: they pay equal regard to Saturday and Sunday, and hold ſwine's fleſh in abhorrence. They behave very decently in their churches, pulling off their ſhoes before they go in. Beſides prayers, they only read a part of the Scriptures, having no preaching; but they carefully attend the hours of divine ſervice, and ſeem to have great devotion.

ACACIA, in botany, is the name of a tree which bears leguminous flowers and leaves in pairs, oppoſite to each other; the piſtil riſes out of the calyx, is enveloped with a ſerrated membrane, and ſucceeded by a flat pod, divided into two parts, containing ſeveral ſeeds in ſhape like a kidney: the leaves of the acacia are placed in pairs on one ſide of the ſtalk, which is terminated by a ſingle leaf.

American ACACIA is a tree common in that part of the world. It does not grow to any great height; its wood is hard and rough, its foliage long, but ſmall and affording but little ſhade, and its branches are full of thorns: this tree being a quick grower, and in the ſpring bearing cluſters of very agreeable flowers, is proper to be planted in clumps of flowering ſhrubs, and in wilderneſs quarters. Its branches being very ſubject to hang down and trail on the ground, it is cuſtomary to prop them, but this greatly disfigures the tree: the acacia is propagated by ſeed.

ACACIA, in the materia medica, an inſpiſſated gummy juice, of a brown colour without, and either blackiſh, reddiſh, or yellowiſh within: it is of a firm conſiſtence, hard and melting in the mouth, has an auſtere aſtringent taſte, but is not diſagreeable. This juice is generally made up into little round lumps of four, ſix, or eight ounces weight, wrapped up in thin bladders, and is brought from Egypt: They eſteem that ſort to be the beſt which is new made, pure, clean, and eaſily diſſolves in water. This juice is expreſſed from the immature pods of a tree called *acacia folio ſcorpioidis leguminoſæ.* They waſh the pods in water before they are ripe, bruiſe them and expreſs their juice, which they boil to a proper conſiſtence, and then lay it in little heaps. This juice analized yields a moderate portion of acid ſalt, a great deal of aſtringent earth, and a large quantity of oil. It is placed among the incraſſants, and repellant aſtringents, prevents vomiting, and ſtops hemorrhages and fluxes of the belly. The doſe is given uſually either in powder, bolus, or any liquid vehicle: the Egyptians gave a drachm of it diſſolved in any liquid every morning, to ſuch as are troubled with ſpitting of blood.

ACACIA *Germanica*, the inſpiſſated juice of wild ſloes gathered before they are fully ripe. It is often uſed as a ſuccedaneum for the Egyptian acacia.

ACADEMICS, a ſect of philoſophers who followed the doctrine of Socrates and Plato, with regard to the uncertainty of human knowledge, and the incomprehenſibility of truth. Academic in this ſenſe, amounts to nearly the ſame with what we call Platoniſt, the only difference between them being that of commencement. The ancients who embraced Plato's ſyſtem were called academici, academics: whereas thoſe that followed the ſame opinions ſince the reſtoration of learning, have taken the denomination of Platoniſts. It may be ſaid, that Socrates and Plato, who laid the firſt foundations of the academy, were not ſo erroneous as thoſe who ſucceeded them; we mean Arceſilas, Carneades, Clitomachus, and Philo. Socrates indeed profeſſed to know nothing; but his doubts aroſe from phyſics only, which he at firſt diligently cultivated, and which he afterwards acknowledged to ſurpaſs the reach of human underſtanding: if he ſometimes ſpoke in the language of the ſceptics, it was out of irony or modeſty, in order to pull down the vanity of the ſophiſts, who fooliſhly boaſted, that they were ignorant of nothing, and always ready to diſpute on all manner of ſubjects. Plato, the father and inſtitutor of the academy, who was inſtructed by Socrates in the art of doubting, confined himſelf to his own manner of treating ſubjects, and undertook to oppoſe all the philoſophers who had preceded him: but by recommending to his diſciples a diffidence of themſelves, and to doubt of every thing, he did not intend to leave them fluctuating between truth and error; but to put them on their guard againſt thoſe raſh and precipitate deciſions, ſo natural to youth, and prevent their falling into error, by freely examining every thing without prejudice. Arceſilas taught, that we do not even know whether we know any thing; that nature has not given us any rule of truth; that human underſtanding and the ſenſes are incapable of comprehending truth; that he found in every thing reaſons oppoſed by an equal force; and in a word that all things are immerſed in darkneſs, and conſequently that we muſt always ſuſpend our aſſent. His doctrine was not much applauded, becauſe he ſeemed deſirous of extinguiſhing every ray of ſcience, of throwing darkneſs on the mind and overturning the foundations of philoſophy. Lacydes was the only perſon who defended the doctrine of Arceſilas: he tranſmitted it to Evander, one of his diſciples, and Evander tranſmitted it to Hegeſinus, who handed it down to Carneades. He however did not follow the doctrine of Arceſilas in every particular, though he retained its principal tenets: this made him paſs for the author of a new academy, which was called the third. He oppoſed, with great wit and eloquence, all the opinions propoſed to him, without diſcovering his real ſentiments. He firſt made Rome acquainted with the power of eloquence and the merit of philoſophy; and that flouriſhing ſtate, attracted by the novelty and excellence of ſo noble a ſcience, followed Carneades with ſo much eagerneſs, that Cato, a man in all other reſpects of an excellent judgment, but deficient in politeneſs, grew jealous of this new kind of erudition, which had the power of captivating the affections of mankind. Cato declared in the ſenate, that they ought to grant Carneades, and the deputies which accompanied him, whatever they demanded, and ſend them inſtantly back with honour to their country.

The corrections which Carneades made in the doctrine of Arceſilas are very trifling: it is eaſy to reconcile what Arceſilas ſaid, "that he found no truth in "things," with what Carneades advanced, "that he did not deny there being "ſome truth in things, but that we have "no rule whereby to diſcern it; for there "are two kinds of truth, the one what we "call truth of exiſtence, the other truth "of judgment." It is therefore plain that thoſe two propoſitions of Arceſilas and Carneades regard the truth of judgment. But the truth of judgment is in the number of relative things, which ought to be conſidered as having a relation to our mind; when therefore Arceſilas ſaid, there was nothing true in things, he meant, that there was nothing in things that the human mind could know with certainty; and this is exactly the ſame with what Carneades maintained. Arceſilas ſaid that nothing could be comprehended, and that all things were obſcure. Carneades granted, that nothing could be comprehended; but did not, for that reaſon, allow that all things were obſcure; becauſe probable things were not, in his opinion, obſcure. But though he made ſome difference in expreſſion, he made no difference in effect; for Arceſilas did not maintain, that all things are obſcure otherwiſe than as they cannot be comprehended, nor did he diveſt them of all ſemblance of truth or probability: this was alſo the ſentiment of Carneades; for when he ſaid, that things were not ſo obſcure, but we might diſcern thoſe which ought to be preferred for the purpoſes of life, he did not pretend that they were clear enough to be comprehenſible: it follows therefore that there was no diverſity of ſentiment between them, when Carneades permitted the wiſe man to entertain opinions, and perhaps even ſometimes to teſtify his own conſent: and when Arceſilas forbid both the one and the other, Carneades only aſſerted that the wiſe man ought, for the common purpoſes of life, to make uſe of probable things, without which he could not live; but not of the conduct of the mind, and in the ſearch after truth; and whence only Arceſilas baniſhed both opinion and conſent. Conſequently their differences conſiſted in expreſſions only, and not in the things themſelves.

Philo, the diſciple of Clitomachus, who had himſelf been a pupil of Carneades, deſerved to be ſtiled with Charmides, "the "founder of the fourth academy," as he differed in ſome points from the ſentiments of Carneades: for he aſſerted that things are in themſelves comprehenſible, though we are unable to comprehend them.

Antiſchus was the founder of the fifth academy. He had been ſeveral years a diſciple of Philo, and maintained the doctrine of Carneades; but, in the decline of life, he quitted his maſter's party, and introduced into the academy the tenets of the ſtoics, which he attributed to Plato, maintaining that the doctrine of the ſtoics was not new, but a reformation of the ancient academy. This fifth academy therefore was only an aſſociation of the ancient academy, and the philoſopy of the ſtoics; or rather the ſtoical philoſophy, dreſt in the habit of the old academy, which flouriſhed under Plato and Arceſilas. Some have indeed pretended that there was only one academy: for as the ſeveral branches which ſpring from the ſame root, and ſpread themſelves on different ſides, are not different trees; ſo all thoſe ſects which ſprung from the ſingle ſtock of the doctrine of Socrates, *that man knows nothing*, though divided into ſeveral ſchools, are no more than one academy.

ACADEMY, in antiquity, was a garden or villa, ſituated in one of the ſuburbs of Athens, about a mile from the city, where Plato and his followers held their aſſemblies to converſe on philoſophical ſubjects. This place gave the denomination to the ſect of academics. This villa had the name of academy given to it from one Academus, or Ecademus, a citizen of Athens, who was originally the owner of it, and made it a kind of gymnaſium. He lived in the time of Theſeus. Cimon embelliſhed the academy, and adorned it with fountains, trees, and walks, for the convenience of philoſophers and men of learning, who here aſſembled to confer together and diſpute upon different ſubjects. It was alſo the burial place of thoſe illuſtrious men who had done any ſignal ſervice to the republic. Sylla however paid no reſpect to this aſylum of the polite arts; for, during the ſiege of Athens, he employed thoſe very trees which formed the walks of the academy, to make engines of war to batter the place. Cicero had alſo a villa or place of retirement near Puzzuoli, to which he gave the name of academy, and where he uſed to entertain ſuch of his friends as had a taſte for philoſophical converſations.

ACADEMY, among the moderns, is uſed to ſignify a ſociety of learned men, eſtabliſhed for the culture and advancement of arts and ſciences.

Some authors confound academy with univerſity; but, though they are nearly the ſame in Latin, they are two different things in Engliſh.

An univerſity is a body compoſed of graduates in ſeveral faculties; of profeſſors, who teach in the public ſchools; of regents or tutors, and ſtudents who learn under them, and aſpire likewiſe to the ſame degree; whereas an academy is not intended to teach or profeſs any art, ſuch as it is, but to improve it; it is not compoſed of novices, to be inſtructed, but of thoſe who are more knowing; of perſons of a diſtinguiſhed capacity to confer and communicate their lights and diſcoveries to each other for their mutual advantage.

Moſt nations have at preſent academies, Ruſſia not excepted: but Italy excels in this reſpect, at leaſt in point of number. There are but few in England; the chief and only ones that merit any great attention,

tion, are called by theſe names, viz. the Royal Society, and the Society of Antiquaries of London. See Royal *Society*, and Antiquarian *Society*. See alſo Society *for the Encouragement of Arts, &c.* and Royal *Academy for Painting, &c.*

There are however, beſides theſe, an academy of muſic, and another of painting, each governed by their reſpective directors.

In France there are flouriſhing academies of all kinds, ſeveral at Paris, and ſome in the provincial towns.

French ACADEMY, inſtituted in the year 1635, by cardinal Richelieu, in order to perfect the French tongue. Its principal buſineſs is, in general, all matters of grammar, poetry, and eloquence: its form is very ſimple, and has never been altered. The members are forty in number, and not one of them has any ſuperiority over the reſt. No nobleman, or man of diſtinction, can be admitted into it upon any other account than that of being a man of letters: for cardinal Richelieu, who was well appriſed of the great advantages ariſing from parts, was deſirous that the mind ſhould keep pace with rank and nobility. Their motto is *à l'immortalité*.

Royal ACADEMY *of Inſcriptions and Belles Lettres* was eſtabliſhed by Lewis XIV. who conſidered that it would be highly advantageous to France, to eſtabliſh an academy, whoſe whole employment ſhould be that of forming inſcriptions, devices, and medals, and diffuſe over thoſe monuments an elegant taſte, and that noble ſimplicity which conſtitutes its undoubted worth. The firſt ſociety conſiſted of a ſmall number choſen out of the members of the French academy, who, upon their eſtabliſhment, met in the library of M. Colbert, from whom they received his majeſty's orders. They undertook to compoſe, by means of medals, a connected hiſtory of the principal events of Lewis XIV's reign. This was an ample field of matter, but very great difficulties attended the execution. The ancients of whom there are ſo many medals remaining, have left us no other rules than the medals themſelves, which had hardly before that time been conſidered, except for the ſake of the beauty of the impreſſion, or ſtudied only for the attainment of hiſtorical knowledge. The moderns, who had, during the two laſt centuries, ſtruck a great many medals, had given themſelves but little trouble about rules, having neither followed nor preſcribed any. Beſides it was difficult to find, in the collections of this ſort, three or four pieces, where genius had, with any ſucceſs, ſupplied the deficiency of method.

Royal ACADEMY *of Sciences.* This academy was eſtabliſhed in 1666, by the care of M. Colbert. Lewis XIV. after the peace of the Pyrennees, being deſirous of eſtabliſhing the arts, ſciences, and literature, upon a ſolid foundation, directed M. Colbert to form a ſociety of men of known abilities and experience in the different branches of literature and ſcience, who ſhould meet together under the king's protection, and communicate their reſpective diſcoveries. M. Colbert, having conferred on this ſubject with thoſe who were moſtly celebrated for their learning, reſolved to form a ſociety of ſuch perſons as were converſant in natural philoſophy and mathematics, to join them to other perſons of ſkill in hiſtory and other branches of erudition, and to add ſuch as were entirely engaged in what are peculiarly called the Belles Lettres, grammar, eloquence, and poetry. But an academy of this kind could not long ſubſiſt upon ſuch a footing; and, therefore, the claſſes of Belles Lettres and hiſtory were reunited to the French academy; ſo that there only remained the claſſes of natural philoſophy and mathematics. The mathematical claſs was compoſed of Meſſ. Carcavy, Huyghens, de Roberval, Frenicle, Auzout, Picard, and Buot; and the natural philoſophers were Meſſ. de la Chambre, his majeſty's phyſician in ordinary; Perrault, Duclos, and Bourdelin, chymiſts; Pequet and Gayen, anatomiſts; Merchant, a botaniſt; and Duhamel, their ſecretary. Theſe learned men, as well as their ſucceſſors, have publiſhed ſeveral excellent works for the advancement of the ſciences, beſides which, the academy, in the years 1692 and 1693, publiſhed every month ſeveral ſeparate tracts, which had been read at their meetings during the courſe of thoſe years.

This academy, ſince its re-eſtabliſhment in 1699, has been very exact in publiſhing every year a volume, containing either the works of its own members, or ſuch memoirs as have been compoſed and read to the academy during the courſe of that year. To each volume is prefixed the hiſtory of the academy, or an extract of the memoirs, and, in general, of whatever has been read or ſaid in the academy: at the end of the hiſtory are the elogiums on ſuch academics as have died in the courſe of that year. The late M. Rouille de Meſlay, counſellor to the parliament of Paris, founded two prizes, one of 2500, and the other of 2000 livres, which are diſtributed by the academy alternately every year; the ſubjects for the firſt muſt relate to phyſical aſtronomy, and thoſe for the latter to navigation and commerce.

The academy has for its motto, *Invenit et perficit.*

There are many other academies in the provinces, particularly at Thoulouſe, Bourdeaux, Soiſſons, Marſeilles, Lyons, Pau, Montauban, Angiers, Amiens, Villefranche, &c.

Royal ACADEMY *of Sciences and Belles Lettres of Pruſſia.* This academy was eſtabliſhed by Frederic I. king of Pruſſia, in 1700, and M. Leibnitz appointed the firſt preſident, when the liſt of the members was adorned with ſome of the greateſt names in the republic of letters. This academy in 1710, publiſhed the firſt volume of its tranſactions, under the title of *Miſcellanea Berolinenſia*; and, though Frederic's ſucceſſor gave but little encouragement to letters, the academy continued to publiſh new volumes in the years 1723, 1727, 1734, and 1740. At length Frederic III. the preſent king of Pruſſia, thought proper to give new vigour to the academy; and accordingly invited to Berlin ſuch foreigners as were of the moſt diſtinguiſhed merit in literature, and encouraged his ſubjects to proſecute the ſtudy and cultivation of the ſciences, by giving ample rewards; ſo that, in 1743, there appeared a new volume of the *Miſcellanea Berolinenſia,* in which the additional force the academy had acquired plainly appeared. However, that prince did not think fit to confine himſelf there: he thought the royal academy of ſciences of Pruſſia, in which, till that time, ſome miniſter or opulent nobleman had preſided, would find an advantage from having a man of letters at its head, and accordingly conferred that honour on M. Maupertuis, a gentleman well known in every part of Europe. At the ſame time the king gave a new regulation to the academy, and took upon him the title of its protector. The academiſts hold two public aſſemblies annually; one in January, upon the preſent king's birthday; and the other in May, on the day of his acceſſion to the throne. At the latter of theſe aſſemblies is given as a prize a gold medal of fifty ducats value: the ſubject for this prize is ſucceſſively natural philoſophy, mathematics, metaphyſics, and erudition: for the academy has this in particular, that it includes metaphyſics, logic, and morality, which are not the objects of any other; there being in this academy a particular claſs engaged in metaphyſical diſquiſitions, called the claſs of ſpeculative philoſophy.

Imperial ACADEMY *of Peterſbourg.* The Czar, Peter I. ſirnamed the Great, by whoſe means Ruſſia ſhook off the yoke of barbariſm, which had reigned ſo many ages in that kingdom, coming into England and France in the year 1717, and obſerving the great utility of literary ſocieties and academies, reſolved to eſtabliſh one in his capital; and had actually taken the neceſſary meaſures for that purpoſe, when death put a period to his life in the year 1725. His ſucceſſor, the Czarina Catherine, being fully informed of his intentions, laboured upon the ſame plan, and in a ſhort time formed one of the moſt celebrated academies in Europe, compoſed of the moſt conſiderable foreigners, ſome of whom ſettled at Peterſburg. Moſt of the foreigners who compoſed that academy being either dead or retired out of the kingdom, it was in a very languiſhing condition when the Czarina Elizabeth aſcended the Ruſſian throne: but that princeſs, happily for herſelf, named count Raſomowſki preſident; who gave the academy a new body of ſtatutes, and left nothing neglected which could re-eſtabliſh its ancient ſplendor. This academy has this modeſt motto, *Paulatim.*

Royal Spaniſh ACADEMY is an academy for cultivating the Caſtilian tongue, eſtabliſhed at Madrid, on the model of the French academy. The deſign of this ſociety was laid by the duke d'Eſcalona, and approved of by the king in 1714, who declared himſelf its protector. It conſiſts of twenty-four academiſts, including the director and ſecretary. Its device is a crucible on the fire, with this motto, *Limpia fija y da eſplendor.*

ACADEMY *of Naturæ curioſi,* in Germany, was firſt founded in 1652, by Mr. Bauſch, a phyſician, and taken, in 1670, under the protection of the emperor Leopold.

ACADEMY *of Painting* is a public ſchool to which the painters reſort, either to draw or paint, and where the ſculptors model after a naked perſon, which they call a model. The royal academy of painting and ſculpture at Paris, took its riſe from the diſputes that happened among the maſter-painters and ſculptors in that capital. This induced Le Brun, Sarazin, Corneille, and others of the king's painters, to form the deſign of a particular academy; and having preſented a petition to the king, they obtained an arret dated the 20th of January 1648. Their meetings were at firſt held in the apartments of M. Charmois, ſecretary to the marſhal Schomberg, who drew up the firſt body of ſtatutes for the academy.

The academy of painting holds a public aſſembly every day for two hours, in the afternoon, to which the painters reſort, either to deſign or paint; and where the ſculptors model after a naked perſon. There are twelve profeſſors, each of whom keeps the ſchool for a month; and there are twelve adjuncts to ſupply them in caſe of need. The profeſſor, upon duty, places the naked man, who is called the model, in ſuch a poſition as he thinks proper, and ſets him in two different attitudes every week. In one week of the month he ſets two models together, which is what they call ſetting the group. The paintings and models made after this model, as well as the copies made from them, are called academies, or academy figures. They have likewiſe a woman who ſtands for a model in the public ſchool. Every three months, three prizes for deſign are diſtributed among the eleves or pupils, as are two others for painting, and two for ſculpture, every year. Thoſe who gain the prizes of painting and ſculpture are ſent to Rome, at the king's expence, to ſtudy there and complete themſelves in their art.

* ACADEMY, the royal, of painting, ſculpture, &c. in London, was incorporated in 1768.

ACADEMY *of Architecture*, a company of ſkilful architects, eſtabliſhed at Paris in the year 1671, by Mr. Colbert, under the direction of the ſuperintendant of the buildings.

ACADEMY is alſo uſed in ſpeaking of the ſeminaries of the Jews, where their rabbins and doctors inſtructed the youth of their nation in the Hebrew language, and explained to them the Talmud and the ſecrets of the Cabala. The Jews have always had theſe ſort of academies ſince their return from Babylon: thoſe of Tiberias and Babylon have been the moſt celebrated.

ACADEMY is alſo underſtood of a riding-ſchool, or place where young gentlemen are taught to ride the great horſe; as alſo the uſe of arms, dancing, vaulting, &c.

The ground ſet apart in an academy for riding, is called the manege, having uſually a pillar in the center, and other pillars placed two by two at the ſides.

ACADEMY *Figures*, in painting, are deſigns made after a model with a crayon or pencil.

ACAJA, in botany, a tree growing naturally in Brazil to the height of a lime: its bark is rough, and of a light aſh colour, like elder; the leaves, which are ſmooth, gloſſy, and ſhining, are placed oppoſite to each other, of unequal ſizes, but in general about four fingers in length, and a finger and a half or two fingers broad, with a broad nerve running the whole length of them. This tree bears yellowiſh flowers, which are ſucceeded by plums, not unlike ours in figure and magnitude, of a yellowiſh colour, and an acid taſte, each containing a ligneous ſtone, which is eaſily cracked, and incloſes a kernel of a yellowiſh white colour. Its wood is red, and as light as a cork.

ACAJOU, *the Caſſu or Caſhew Nut Tree*, in botany, a kind of plant producing a monopetalous flower, in the ſhape of a funnel, and divided into ſegments: out of the calyx ariſes a piſtillum, ſurrounded with threads, or ſtamina, faſtened to an oviary at the bottom of the flower: this oviary afterwards becomes a ſoft fruit, at the extremity whereof is a capſula, in the form of a kidney, incloſing a ſeed of the ſame kind. The acajou grows every where in Malabar, though it is a native of Brazil. They make a drink of the juice of this tree, which inebriates like wine. The kernel of the nut, when roaſted, is very good to eat; but the ſhell is ſo acrimonious, that it excoriates the gums, in caſe you attempt to bite it. The dyers uſe the oil which they expreſs from the ſhells of the nut of this tree in dying a black colour. The inhabitants of Brazil reckon their age by means of theſe nuts, for which purpoſe they lay up one of them every year.

ACANACEÆ, in botany, all thiſtles that are prickly and have heads, are ſo called.

ACANGIS, a name given by the Turks to their huſſars, who are light troops, fitter for ſkirmiſhing and pillaging, than to engage with regular troops; they are generally ſent out in detachments, to get intelligence, harraſs the enemy, attack convoys, and ravage the country.

ACANTHA, in botany, a name given to prickly or thorny plants.

ACANTHA, in anatomy, ſignifies the protuberance of the back-bone, commonly called *ſpinæ dorſi*.

ACANTHACEOUS, an epithet applied by botaniſts to plants of the prickly kind.

The word is formed from the Greek, and ſignifies a thorn.

ACANTHABOBES, in ſurgery, a kind of forceps uſed in extracting thorns, ſplinters, &c.

The word is alſo formed from the Greek.

ACANTHUS, in botany, a plant producing an irregular, monopetalous flower, terminated in a ring at the bottom: the anterior parts, and the poſterior, are in the ſhape of a ring. The place of the upper lip is filled with ſtamina, whoſe ſummits are like a bruſh; out of the calyx proceeds a piſtil, which is inſerted into the ovary at the bottom of the flower, and becomes a fruit in the ſhape of an acorn, which is enveloped by the calyx; this fruit is divided by a partition into two cells, each containing ſeeds, which are commonly of an irregular figure.

ACANTHUS, in architecture, an ornament reſembling two ſpecies of plants of the ſame name, one of which is wild, and the other cultivated in gardens. The firſt is called in Greek acantha, which ſignifies a thorn; and is that which the major part or the Gothic ſculptors have imitated in their ornaments. The ſecond is called in Latin branca urſina, becauſe they pretend that it reſembles a bear's foot. The ancient and modern ſculptors have preferred the latter, and made uſe of it particularly in their capitals. Vitruvius ſays, that this plant gave occaſion to Callimachus, the Grecian ſculptor, to compoſe the Corinthian capital.

*ACAPULCA ſhip taken by Admiral Anſon, June 20, 1743, in his return from a voyage round the world.

*ACAPULCO, a conſiderable town and port in Mexico, on the South Sea, has a fine harbour, from whence a ſhip annually ſails to Manilla, near the coaſt of China in Aſia: and another returns annually from thence with all the treaſures of the Eaſt Indies, ſuch as diamonds, rubies, ſaphires, the rich carpets of Perſia, the camphire of Borneo, the benjamin and ivory of Pegu and Cambodia; the ſilks, muſlins, and callicoes of the Mogul's country; the gold-duſt, tea, china-ware, ſilk, and cabinets of China and Japan; beſides cinnamon, cloves, mace, nutmegs, and pepper; this ſingle ſhip generally contains more riches than many whole fleets. Long. 102. 29. W. Lat. 17. 30. N.

ACARA, a ſmall Braſilian fiſh, about three inches in length, and its body reſembling that of a perch. The mouth is narrow, and the jaws as rough as a file. The eyes are not large, but have a golden circle. and the back fins connected together. The tail is oblong, and the ſcales are pretty large, of a ſilver colour, but on the head, back, and ſides, they are mixed with umber. In the middle of each ſide there is a large black ſpot, as alſo near the root of the tail. It is a river fiſh, and keeps conſtantly in freſh water. *Brook's Natural Hiſtory.*

ACARA-PITOMBA, a beautiful Braſilian fiſh, reſembling our mullet, and near two feet in length. Its tail terminates in two oblique horns. Along the middle of each ſide runs a broad and beautiful gold-coloured line, from the gills to the tail. Its back alſo down to this line is variegated with ſpots of the ſame colour; while its ſides below that line are decorated with ſhort longitudinal lines of a ſomewhat paler colour. Its belly is white, and its fins yellow.

ACARI, the name of inſects that breed under the ſkin. Ariſtotle calls the ſmall inſects that breed in wax by the ſame name.

ACARICABA, in botany, a Braſilian plant, whoſe roots are aromatic, and may be placed in the firſt claſs of aperitives.

ACARON, in botany, wild myrtle or butcher's broom. It is principally uſed in obſtructions of the liver, &c.

ACATALEPSY, among the ancient philoſophers, implied the impoſſibility of conceiving or comprehending a thing.

The word takes its formation from the Greek.

ACATASIATOS, a term uſed by the ancient phyſicians to ſignify irregular fevers, where paroxyſms are uncertain, and the appearance of the urine perpetually changing.

The word is Greek.

ACAULIS, in botany, a term applied to plants, whoſe flowers reſt on the ground, having no caulis or ſtalk.

The word is compounded of *a* neg. and *caulis*, a ſtalk.

ACAB, the name of a bird reſembling our common hen, frequently found wild in the Phillippine iſlands.

ACCA-LARENTIA, a pagan goddeſs of the Romans. She was the wife of Fauſtulus, ſhepherd to king Numitor, and nurſe of Romulus and Remus. Romulus out of gratitude, decreed her divine honours after her death, and appointed a feſtival, called from her Larentalia; which was celebrated, according to Varro, in April; but according to Ovid, in December.

ACCEDAS *ad curiam*, in law, a writ which lies for him who has received falſe judgment, or fears partiality in a court-baron, or a hundred court. It is directed to the ſheriff, and iſſued out of chancery; but returnable into the king's-bench, or common pleas. In the regiſter of writs, it is ſaid to be a writ which lies as well for judgment delayed, as for falſe judgment; and that it is a ſpecies of writ, *Recordare*, the ſheriff being obliged to make record of the ſuit in the inferior court, and certify it into the king's court.

ACCELERATED implies, quickened, continually increaſing. Thus, accelerated motion is a motion continually increaſing. The word is Latin, *acceleratus*, compound of *ad*, to, and *celer* ſwift.

ACCELERATED *Motion*, in mechanics, is that whoſe velocity is conſtantly encreaſed; and, if the acceſſions of velocity be equal in equal times, the motion is ſaid to be uniformly accelerated. This comes chiefly under conſideration, in the deſcent of heavy bodies, by the force of gravity.

Notwithſtanding various opinions on this ſubject, the cauſe of *acceleration* is nothing myſterious; the principle of gravitation, which determines the body to deſcend, determining it to be *accelerated* by a neceſſary conſequence.

A body having once begun to deſcend through the impulſe of gravity, that ſtate is now, by Sir Iſaac Newton's firſt law, become as it were natural to it, inſomuch that, were it left to itſelf, it would for ever continue to deſcend, though the firſt cauſe of its deſcent ſhould ceaſe. But, beſides this determination to deſcend, impreſſed upon it by the firſt cauſe, which would be ſufficient to continue the degree of motion already begun to infinity, new impulſes are continually ſuperadded by the ſame cauſe, which continue to act upon the body already in motion, in the ſame manner as if it had remained at reſt: there being then two cauſes of motion, acting both in the ſame direction, it neceſſarily follows, that the motion which they unitedly produce, muſt be more conſiderable than what either could produce ſeparately; and, as long as the velocity is thus increaſed, the ſame cauſe ſtill ſubſiſting to increaſe it yet more, the deſcent muſt of neceſſity be continually accelerated. Suppoſing that gravity, from whatever principle, acts uniformly upon all bodies at the ſame diſtance from the center of the earth, dividing the time which the heavy body takes up in falling to the earth into infinitely ſmall equal parts, this gravity will impel the body towards the center of the earth, in the firſt infinitely ſhort inſtant of the deſcent. If, after this, we ſuppoſe the action of gravity to ceaſe, the body will continue perpetually to advance uniformly towards the earth's center, with an infinitely ſmall velocity, equal to that which reſulted from the firſt impulſe. But then, if we ſuppoſe that the action of gravity continues in the ſecond inſtant, the body will receive a new impulſe towards the earth equal to that which it received in the firſt inſtant, conſequently its velocity will be doubled; in the third inſtant it will be tripled; in the fourth, quadrupled; and ſo on. For the impulſe made in any preceding inſtant, is no ways altered by that which is made in the following one; but they are accumulated on each other: wherefore, the inſtants of time being ſuppoſed infinitely ſmall, and all equal, the velocity acquired by the falling body will be in every inſtant, as the times from the beginning of the deſcent, and conſequently the velocity will be proportional to the time in which it is acquired. The motion of an aſcending body, or of one that is impelled upwards, is diminiſhed or retarded by the ſame principle of gravity, acting in a contrary direction, after the ſame manner that a falling body is accelerated. A body projected upwards, aſcends until it has loſt all its motion, which it does in the ſame interval of time that the ſame body would have taken up in acquiring by falling, a velocity equal to that with which the falling body began to be projected upwards, and conſequently the heights to which bodies projected upwards, with different velocities, arrive, are to each other as the ſquare of thoſe velocities.

ACCELERATED *Motion of Pendulums*. See PENDULUM.

ACCELERATED *Motion of Projectiles*. See PROJECTILES.

ACCELERATION, in philoſophy, implies an increaſe of velocity in the motion of a body; and is oppoſed to retardation, by which term is underſtood a diminution of velocity.

ACCELERATION, in aſtronomy, is the time whereby a fixed ſtar in one diurnal revolution anticipates the mean revolution of the ſun, being 3′, 56″, in one day.

ACCELERATORES *Urinæ*, in anatomy, two muſcles of the penis, whoſe principal office is to expedite the diſcharge of the urine and ſemen. Authors have erred in aſſigning the origination of theſe muſcles, either to the ſphincter ani, or tubercles of the oſſa iſchii. They ariſe fleſhy from the ſuperior part of the urethra, as it paſſes under the oſſa pubis, and encompaſſing the external part of the bulb of its cavernous body, both muſcles meet on the inferior part, correſponding with the ſeam of the ſkin in the perinæum, and continue ſo united for the ſpace of about ſix inches; after which they ſeparate from each other, and aſcend to their inſertions on each ſide of the corpora-cavernoſa penis. Beſides the uſe generally aſcribed to theſe muſcles, in compreſſing the urethra in the diſcharge of the urine, and promoting the ejaculation of the ſemen, (which action is chiefly performed by the laſt deſcribed part of them embracing the urethra, as they paſs to their inſertions on each ſide the cavernous bodies of the penis); they alſo aſſiſt the erectores penis in their erection, by driving the blood contained in the bulb of the cavernous body of the urethra towards the glands in greater quantities, whereby it becomes diſtended, the veins, which carry the refluent blood from the corpus cavernoſum urethra, at that time being alſo compreſſed by the ſwelling of theſe muſcles. *Cooper.*

ACCENSION, in philoſophy, the act of kindling, or ſetting a body on fire.

The word is compounded of *ad*, and *candeo*, to ſhine.

ACCENT, an inflection of the voice, giving to each ſyllable of a word its proper pitch with regard to height or lowneſs.

The word is compounded of *ad* to, and *cano*, to ſing.

ACCENT, in grammar, a certain mark or character placed over a ſyllable, to direct the manner of its pronunciation, and regulate the inflection of the voice in reading. We reckon three grammatical accents, viz. the acute, the grave, and the circumflex.

The Greeks ſeem to have been the firſt who introduced the uſe of accents in writing. The author of *La Methode Greque*, obſerves, that the right pronunciation of the Greek language, being natural to the Greeks, it was needleſs for them to mark it by accents, in their writings: ſo that, according to all appearance, they only began to make uſe of them ſo low as the time in which the Romans, being curious to learn the Greek tongue, ſent their children to ſtudy at Athens, thinking thereby to fix the pronunciation, and to facilitate it to ſtrangers, which happened, as the ſame author obſerves, a little before Cicero's time.

The acute accent, which was written from right to left, ['] ſhewed, that the voice ſhould be raiſed in pronouncing that vowel on which it was marked. The grave accent, which was wrote thus [`] on the contrary, denoted that the voice ſhould be lowered. The circumflex accent is compounded of the acute and grave, though in length of time the tranſcribers rounded it after this manner [˜]; but it is only uſed in the Greek. This accent was deſigned to give us to underſtand, that, after having firſt raiſed the voice, it ſhould be lowered upon the ſame ſyllable. The Latins have made the ſame uſe of theſe three accents. That elevation and ſinking of the voice were more ſenſible among the ancients than among us, becauſe their pronunciation was more elevated and tuneful. However, we likewiſe have a riſing and lowering of the voice in our manner of ſpeaking, and that independently of the other words of the phraſe; ſo that the ſyllables of our words are raiſed or ſunk, according to the proſodic or tonic accent, independent of the pathetic, i. e. of the tone that paſſion and ſentiment gives to the whole phraſe; for it is the nature of every voice, ſays the author of *La Methode Greque*, to have ſome elevation, which keeps up the pronunciation; and this elevation is afterwards moderated and diminiſhed, and is not laid upon the ſucceeding ſyllables. This difference between the pronunciation of the ancients and ours, appears to be the reaſon why, though we have a quantity as they had, yet the difference of our long and ſhort quantities not being equally ſenſible in all our words, our verſes are only formed by the harmony which reſults from the number of ſyllables: whereas the Greek and Latin verſes draw their harmony from the number of feet adapted by certain combinations of long and ſhort ſyllables. The dactyl, iambic, and other feet, enter in common diſcourſe, ſays Cicero, and the hearer eaſily knows them; *Eos facile agnoſcit auditor.* Cic. Orat. *n.* lvi. "If in our theatre, ſays he, an actor pronounces a ſyllable ſhort or long, or with a grave or acute tone, otherwiſe than as it ought to be pronounced, all the people cry out againſt it. However adds he, the people have not ſtudied the rule of our proſodia, and only feel themſelves offended by the actor's pronunciation; but cannot explain how, or in what manner: in this particular, there is no other rule but the diſcerning it by ear; and with that help only, which cuſtom and habit has given, they know the long and ſhort, and diſtinguiſh the grave from the acute."

ACCENT, in rhetoric, a particular manner of expreſſion.

ACCENT alſo implies a certain inflection of the voice; or a peculiar tone and manner of pronunciation, contracted from the country, where a perſon was bred.

ACCENT, in muſic, a modulation of the voice to expreſs a paſſion.

ACCEPTANCE, implies the conſent of the perſon who accepts or receives.

The word is compounded of *ab*, from, and *capio*, to receive.

ACCEPTANCE, in common law, is the tacitly agreeing to ſome act which another has done.

ACCEPTANCE, in commerce, the ſigning or ſubſcribing a bill of exchange, by which the acceptor obliges himſelf to pay the contents of the bill. We ſhould therefore be careful not to accept any bills that we have no effects in hand to anſwer, or that we are not ſure will be remitted within the time; becauſe, when a bill is once accepted, the acceptor becomes the principal debtor, and the bill muſt be abſolutely paid when it becomes due, otherwiſe the acceptor is liable to be ſued for the default of payment. It is uſal to leave bills of exchange with thoſe upon whom they are drawn, for acceptance. But the authors, who have wrote upon commerce, obſerve, that ſuch a cuſtom is dangerous. However, if the perſon with whom a bill of exchange hath been left for acceptance, will keep it in his hands under any pretence whatſoever, the difficulty which he makes of returning it, is tantamount to an acceptance, and he will be obliged to pay the contents.

Bills payable at ſight are not accepted, becauſe they muſt either be paid when preſented, or elſe proteſted for want of payment.

The acceptance of bills payable at a fixed day, at uſance, or double uſance, &c. need not be dated; becauſe the time is reckoned from the date of the bill: but it is neceſſary to date the acceptance of bills payable at a certain number of days after *ſight*, becauſe the time does not begin to run till the date of that acceptance. This kind of acceptance is made thus: *Accepted ſuch a day and year*, and ſigned.

In general, the perſon to whom a bill of exchange is made payable ought to demand the acceptance of the perſon on whom it is drawn, and that in the full extent of the terms of the bill, and on refuſal of acceptance to return it with proteſt: this he ſhould do for his own ſecurity, as well as for that of the drawer. Thus, if the bearer of a bill conſents to an acceptance at twenty days ſight, inſtead of eight days expreſſed in the bill, he runs the riſk of the twelve days prolongation; ſo that he can have no recourſe againſt the drawer, ſhould the acceptor break in that time. Again, if a bill be drawn for three thouſand pounds, and the bearer agrees to take an acceptance for two only, and ſhould receive no more than that ſum, the remaining thouſand would be at the hazard of the bearer, as well as in the former caſe. If therefore a bill be only accepted in part, or for a longer time than that expreſſed in it, the bearer ought to proteſt it, at leaſt for the ſum not accepted.

Again, if the acceptor fails or refuſes to make payment when the bill becomes due, it is neceſſary to get the bill immediately proteſted by a public notary, to be ſent along with the proteſt to the remitter, to procure a ſatisfaction from the drawer. By ſtatute, the inland bills of exchange muſt be accepted by ſigning or endorſing in writing, and proteſted for refuſal of ſuch acceptance, otherwiſe the drawer is not liable to coſts; it muſt likewiſe be returned to the drawer within fourteen days. However, ſuch proteſt is not neceſſary, unleſs the value be acknowledged in the bill to be received, and unleſs the bill be drawn for twenty pounds or upwards. A bill drawn on two jointly, muſt have a joint acceptance, otherwiſe be proteſted; but if on two or either of them, the acceptance of one is ſufficient.

ACCEPTATION, in grammar is the ſignification of ſenſe in which a word is taken and received. Moſt words in every language yet known, have ſeveral acceptations.

ACCEPTILLATION, in the civil law, an acquittance given by a creditor to a debtor, without receiving any money.

ACCEPTOR, one who accepts a bill of exchange.

ACCESS, in a general ſenſe, the approach of one thing towards another: in a more particular acceptation, the permiſſion or leave to come near a perſon or thing.

The word is compounded of *ad*, to, and *cedo*, to ſucceed, or approach.

ACCESS, among phyſicians, is the beginning of a paroxyſm, or fit of an intermitting diſeaſe.

ACCESSIBLE, that which may be approached, or to which acceſs may be had.

ACCESSIBLE *Diſtance*. See DISTANCE.

ACCESSION, the act of approaching, or going to a place, perſon, or thing. In a more reſtrained acceptation, it ſignifies the act whereby a thing is joined or united to ſomething that previouſly exiſted.

ACCESSION is uſed to ſignify a prince's ſucceſſion to the throne; and the act of engaging and becoming a party in a treaty before concluded between other powers.

ACCESSION, in the healing art, implies the beginning of the fit or paroxyſm of an intermitting fever.

ACCESSORIOUS, a name given to a particular nerve by Dr. Willis. It belongs to the eighth pair, and ariſes by ſeveral filaments from both ſides of the medulla ſpinalis of the neck.

ACCESSORY, or ACCESSARY, in a general ſenſe, implies whatever accedes, or is added to another and more principal object.

ACCESSORY, or ACCESSARY, in law, a perſon guilty of a felonious offence, not principally, but by participation, as by command, advice, or concealment.

There are acceſſories before the fact, and acceſſories after it. An acceſſory before the fact is he that, being preſent at the time of the felony committed, procures, counſels, commands, or abets another to commit a felony. This is an offence greater than the acceſſory after; and therefore, in many caſes, clergy is taken away from acceſſories before it, which yet is not taken away from acceſſories after, as in petit treaſon, murder, robbery, and wilful burning. Acceſſories after the fact is, where a perſon, knowing the felony to be committed by another, receives, relieves, comforts, or aſſiſts the felon.

ACCIDENT, ſomething produced, caſually, or by chance without any previous intention in the agent.

ACCIDENT, in metaphyſics, ſomething additional or ſuperadded to an object, not eſſentially belonging to it, and without which the object can ſubſiſt.

ACCIDENT, in heraldry, an additional note or mark in a coat of arms, which may be either omitted or retained, without altering the eſſence of the armour.

ACCIDENT, among grammarians, implies a property attached to a word, without entering into its eſſential definition: for every word notwithſtanding its ſignification, will be either primitive, derivative, ſimple, or compound, which are the accident of words.

A word is ſaid to be primitive, when it is taken from no other word in the language in which it is uſed: thus *heaven*, *king*, *good*, are primitive words. It is ſaid to be derivative, when it is taken from ſome other word: thus *heavenly*, *kingdom*, *goodneſs*, *&c.* are derivatives. A ſimple word is eaſily diſtinguiſhed from a compound: thus *juſt*, *juſtice*, are ſimple words; *unjuſt*, *injuſtice*, are compound.

Beſides theſe accidents, common to all ſorts of words, each particular ſpecies has its accidents: thus the accidents of the noun ſubſtantive are the gender, declenſion, and number: and the adjective has another accident, namely, the compariſon.

ACCIDENT, in logic, is when we join a confuſed and indeterminate idea of ſubſtance with a diſtinct idea of ſome mode, becauſe it is then capable of repreſenting every thing to which that mode can belong.

ACCIDENT, among phyſicians, ſignifies a revolution occaſioned by ſome new cauſe, which adds ſtrength to the diſeaſe already exiſting. The moſt celebrated practitioners in the healing art recommend the utmoſt attention to the violence of accidents, becauſe their continuance may augment the diſtemper to ſuch a degree as to render it incurable.

ACCIDENTAL, in a general ſenſe, implies ſomething that happens caſually or by accident, or that is not eſſential to its ſubject.

ACCIDENTAL, in philoſophy, is applied to that effect which flows from ſome cauſe intervening by accident, without being ſubject to general laws, or regular returns. In this ſenſe *accidental* is oppoſed to *conſtant* and *principal*. Thus the ſun's place is, with reſpect to the earth, the conſtant and principal cauſe of the heat in ſummer, and the cold in winter; whereas winds, ſnows, and rains, are the accidental cauſes, which often alter and modify the action of the principal cauſe.

ACCIDENTAL *Point*, in perſpective, the point in the horizontal line where the projections of two lines parallel to each other meet the perſpective plane.

ACCIPENSER, in natural hiſtory, genus of fiſhes, whoſe mouths are tubular and without teeth. They have only a ſingle hole or aperture of the gills on each ſide; the body is oblong, and generally furniſhed with ſeven fins. There are only two ſpecies of this fiſh, namely, the ſturgeon and huſo, or iſinglaſs fiſh.

ACCIPITER, in ornithology, the name of a genus of birds, whoſe diſtinguiſhing characteriſtic is a crooked or hooked bill. This genus is ſubdivided into three claſſes, the parrot, the owl, and the hawk kinds.

ACCISMUS, in rhetoric, a ſpecies of irony.

ACCLAMATION, a token of joy, approbation, or applauſe, whereby the public teſtify their eſteem and approbation.

The word is compounded of *ad*, to or at, and *clamo*, to ſhout, or cry aloud.

The ancient forms of acclamation, were different among different nations. The Hebrews uſed to cry *Hoſannah*, and the Greeks Αγαθη τυχη, good fortune. Herodotus mentions ſome magiſtrates at Athens who were elected by acclamation, though it was not indicated by ſhouts, but by holding up of hands. Among the Romans there were three different kinds of acclamation, that of the people, of the ſenate, and of the aſſemblies of the learned. The acclamations of the people were originally nothing more than the confuſed ſhouts of the multitude tranſported with joy; the ſimple undiſguiſed expreſſions of public approbation. But under the emperors, this impetuous motion, to which the people abandoned themſelves as it were by enthuſiaſm, became an art, and a ſtudied harmony; a muſician ſet the tune, and the people giving two cheers, alternately repeated the form of the acclamation. The moſt common forms were *feliciter*, *longiorem vitam*, *annos felices*: thoſe of triumph were verſes in praiſe of the conqueror, the ſoldiers and people crying out at certain intervals, *io triumphe.* The acclamations of the ſenate, though more ſerious, had the ſame end, that of honouring, and often flattering the prince. The forms generally uſed to teſtify their approbation of his propoſitions, were, *omnes*, *omnes*, *æquum eſt*, *juſtum eſt.* It was cuſtomary for men of letters to recite the compoſitions in the Capitol, or ſome temple, before a numerous aſſembly; and the acclamations were there given nearly in the ſame manner as at the public ſhews.

ACCLIVIS, in anatomy, the name by which ſome writers call the obliquus aſcendens.

ACCLIVITY, the ſlope or aſcent of a line or plane conſidered in its aſcending direction. The word is compounded of *ad* and *clivus*, a ſlope. Some writers on fortification have uſed the term acclivity as ſynonimous with talus; but the latter properly ſignifies the ſlope in general, whether it be conſidered as aſcending or deſcending.

ACCLOYED, in farriery, ſignifies pricked.

ACCOMMODATION, among divines, implies the application of what is ſaid of one perſon or thing to another.

The word is compounded of *ad* to, and *commodus*, commodious.

ACCOMMODATION, in philoſophy, is the application of one thing to another by analogy.

ACCOMMODATION, in law, is an amicable agreement between two contending parties.

ACCOMPANYMENT, in muſic, the inſtruments that accompany a voice to render the melody more agreeable. The manner of accompanying depends more upon practice and taſte, than upon any certain rules that can be given.

ACCOMPANYMENTS, in painting, the objects added either by way of ornament or probability. Thus dogs, guns, and game, are the proper accompanyments of a hunting piece.

ACCOMPLICE, in law, one who was privy to, or aſſiſted in, the perpetration of ſome crime.

ACCOMPLISHMENT, in a general ſenſe, implies the execution and ſucceſs of a thing we before propoſed to ourſelves, or planned. The word is compunded of *ad*, and *compleo*, to finiſh, or fulfill. The accompliſhment or completion of the prophecies of the Old Teſtament, in the perſon of our Saviour, clearly ſhews that he was the Meſſiah. The accompliſhment of a prophecy may be done two ways, either directly, or by accommodation: for one and the ſame prophecy may have ſeveral accompliſhments at different times: as, for inſtance, that of our Saviour, touching the deſtruction of Jeruſalem, which muſt have a ſecond accompliſhment in the times which ſhall immediately precede the laſt judgment.

ACCOMPT. See ACCOUNT.

ACCORD, in muſic.

ACCORD, in law, an accommodation between contending parties, by means of an offer made by one, and accepted by the other.

ACCORD, in painting, ſignifies the harmony that reigns among the lights and ſhades of a picture.

ACCORNED, in heraldry, is applied to every animal borne in an eſcutcheon, when its horns are of different colours from thoſe of the real animal; when it is ſaid to be accorned.

ACCOUNT, or ACCOMPT, in arithmetic, a computation of the number of certain things, whether they relate to time, weight, meaſure, &c.

ACCOUNT, is uſed to ſignify the books in which merchants, &c. enter all their buſineſs.

ACCOUNT *in Company* is an account kept by traders in partnerſhip, containing all the articles relating to their joint trade.

ACCOUNT in law, a writ or action which lies againſt a bailiff, or receiver, who refuſes to give a proper account to another appointed for that purpoſe. The proceedings upon this action being difficult, dilatory, and expenſive, it is now ſeldom uſed, eſpecially if the party has any other remedy, as debt, covenant, caſe, or other action; or if the demand be of conſequence, and the matter of an intricate nature: for, in ſuch caſes, it is more adviſeable to have recourſe to a court of equity, where matters of account are more commodiouſly adjuſted, and more advantageouſly determined with regard to both parties; the plaintiff being in that court entitled to diſcovery of books, papers, and the defendant's oath: and on the other hand, the defendant allowed to diſcount the ſums paid or expended by him, and all reaſonable allowances,

ances, and to diſcharge himſelf of ſums under forty ſhillings by his own oath, if by anſwer or other writing he charges himſelf with ſuch. He is alſo entitled, after the account is ſettled, to a decree in his favour, if any thing appears to be due to him on the balance.

Chamber of ACCOUNTS, the name of a court in France, anſwering nearly to our Exchequer.

ACCOUNTANT, or ACCOMPTANT, a perſon appointed to keep the accounts of a company, office, &c. Alſo one ſkilled in the nature of accounts, or who makes the ſtudy and practice of accounts his buſineſs.

ACCOUNTANT-GENERAL, an officer in the Court of Chancery, appointed by act of parliament to receive all monies lodged in court, and convey the ſame to the bank of England for the better ſecurity.

ACCRETION, is the encreaſe or augmentation of a body by the addition of new parts.

The word is compounded of *ad*, to, and *creſco*, to grow.

ACCRETION in civil law, implies the property of a vague or unoccupied thing, acquired by its adhering to or following another thing already occupied.

ACCUSATION, in law, the act of accuſing, or the charge brought againſt any perſon for a crime.

The word is compounded of *ad*, to and *cauſor*, to blame.

By Magna Charta, no man ſhould be impriſoned or condemned on any accuſation, without trial by his peers, or the law. None ſhall be vexed with any accuſation, but according to the law of the land: and no man may be moleſted by petition to the king, &c. unleſs it be by indictment, or preſentment of lawful men, or by proceſs at common law. Promoters of ſuggeſtions are to find ſurety to purſue them, and if they do not make them good, ſhall pay damages to the party accuſed, and alſo a fine to the king. No perſon is obliged to anſwer upon oath to a queſtion whereby he may accuſe himſelf of any crime, &c.

ACCUSATIVE, in the Latin grammar, is the fourth caſe of nouns, and ſignifies the relation of the noun on which the action implied in the verb terminates; and hence, in ſuch language as have caſes, theſe nouns have a particular termination called accuſative: as *Auguſtus vicit Antonium*, Auguſtus vanquiſhed Antony. Here *Antonium* is the noun, on which the action implied in the verb *vicit* terminates; and therefore muſt have the accuſative termination. Ovid, ſpeaking of the palace of the ſun, ſays, *Materiem ſuperabat opus*. The work ſurpaſſed the materials. Here *materiem* has the accuſative termination; becauſe it determines the action of the verb *ſuperabat*.

In the Engliſh language there are no caſes, except the genitive, the relation of the noun being ſhewn by the aſſiſtance of propoſitions, as *of*, *to*, *from*, *&c.* By this means we are not embarraſſed with the trouble and difficulties attending other languages.

ACER, in botany, the maple-tree.

ACER *Majus*, the great maple called alſo the ſycamore. See *Great* MAPLE.

ACETABULUM, in anatomy, a large cavity of a bone which receives another convex bone in order to admit of a circular motion in the joint thus articulated. Thus the large cavity found in the oſſa innomminata is particularly called the acetabulum, which receives the head of the femur, or thigh-bone. It is formed by the juncture of the os ilium, iſchium, and pubes.

ACETABULUM likewiſe ſignifies a kind of glandular ſubſtance, many of which are founded in the placenta of ſome animals.

ACETABULUM, in botany, a genus of ſea plants, whoſe leaves are ſhaped like a baſon.

ACETOSA, in botany, common ſorrel. It has a long, fibrous, yellowiſh, bitter root, and long oval leaves placed alternately on the ſtalk, which is ſtriated a foot in length, and divided into ſeveral branches. The impalement of the flower is compoſed of three ſmall leaves bended backwards. It agrees with the dock in all its characters, except in having an acid taſte. It is but a ſmall plant in the fields, but in the gardens produces large leaves. It muſt be ſown early in the ſpring, in a ſhady moiſt border; and, if the plants are afterwards removed into another ſhady border, they will produce ſtill larger leaves, and continue much longer. Sorrel is uſed in medicine to cool and quench thirſt; and the decoction of the leaves makes a uſeful drink in fevers. It is excellent againſt the ſcurvy, and in ſome cold countries they uſe a mixture of the juices of ſorrel and ſcurvy-graſs againſt this diſeaſe with ſucceſs. *Brookes's Natural Hiſt.*

ACETOSA *Rotundifolia*, round-leaved or French ſorrel. This plant has the ſame characters as the former, excepting the leaves, which are ſometimes almoſt round.

found. This is the beſt ſort for kitchen uſe, and therefore is often planted in gardens. The roots are very apt to ſpread, by which means it is eaſily propagated, and muſt be planted at greater diſtances than the former, namely, a foot at leaſt. It is cooling like the former, quenches thirſt, and excites an appetite. The decoction of it is good in bilious fevers. *Brookes's Natural Hiſt.*

ACETOSE, or ACETOUS, an epithet applied to ſuch liquors, fruits, &c. as have a ſour taſte.

ACETUM, vinegar. See VINEGAR.

ACETUM, *diſtillatum*, diſtilled vinegar. See *Diſtilled* VINEGAR.

ACHAT, in law, implies a purchaſe or bargain. And hence probably purveyors were called *Achators*, from their making bargains.

ACHE, or ACH, a ſevere pain in any part of the body; as the head-ache, tooth-ache, &c. See HEAD-ACHE, TOOTH-ACHE, &c.

* ABHELOUS, in fabulous hiſtory, wreſtled with Hercules, for Deianira, daughter of Oenus: but as Abhelous had the power of aſſuming all ſhapes, the conteſt was long dubious: at laſt, as he took that of a bull, Hercules tore off one of his horns, ſo that he was forced to ſubmit, and to redeem it by giving the conqueror the horn of Amalthæa, the ſame with the Cornucopia, or horn of plenty, which Hercules having filled with a variety of fruits, conſecrated to Jupiter.

ACHERNER, in aſtronomy, a ſtar of the firſt magnitude in the ſouthern extremity of the conſtellation Eridanus. Its longitude is $11^\circ\ 48'\ 20''$ of Piſces, and its latitude $32^\circ\ 46'\ 3''$ S.

*ACHERON, in heathen mythology, a river of Epirus, which according to ſome, roſe out of the lake Acheruſia in Epirus, and emptied itſelf into the bay of Ambracia. Others make it a ſulphureous ſtinking lake near cape Miſenum, in the bay of Naples. The poets feigned it to be the ſon of Titan or Terra, or as others ſay, of Ceres; and that he was born in a cave without a father, and ſent to hell for furniſhing the Titans with water during their war with the gods, where he was turned into a river, over which departed ſouls were ferried.

ACHILLEA, in the Linnean ſyſtem of botany, a genus of a plant of the ſyngeneſia claſs, comprehending the millefolium and ptarmica of Tournefort.

* ACHILLES, in fabulous hiſtory one of the greateſt heroes of ancient Greece, was the ſon of Peleus and Thetis. He was a native of Phthia, in Theſſaly: and his mother fed him by day with ambroſia, and by night covered him with celeſtial fire. She dipped him alſo in the waters of the river Styx, by which his whole body became invulnerable, except that part of his heel by which ſhe held him; and afterwards entruſted him to the care of the centaur Chiron, who, to give him the ſtrength neceſſary for martial toil, fed him with honey, and the marrow of lions and wild boars, &c. To prevent his going to the ſiege of Troy, ſhe diſguiſed him in female apparel, and hid him among the maidens at the court of king Lycomedes: but Ulyſſes diſcovering him, perſuaded him to follow the Greeks. Achilles diſtinguiſhed himſelf by a number of heroic actions; and having quarrelled with Agamemnon on account of Briſeis, reſolved no longer to concern himſelf in the war; till hearing that Hector had killed his friend, Patroclus, he fought with him, killed him, faſtened his corpſe to his chariot, and dragged it round the walls of Troy. At laſt Paris treacherouſly wounded him in the heel with an arrow, while he was in a temple treating about his marriage with Philoxena, daughter to king Priam. Of this wound he died, and was interred on the promontory of Sigæum, and after Troy was taken, the Greeks ſacrificed Philoxena on his tomb. It is ſaid, that Alexander ſeeing this tomb, honoured it by placing a crown upon it: at the ſame time crying out, that Achilles was happy in having, during his life, ſuch a friend as Patroclus; and after his death, a poet like Homer.

ACHILLES, an appellation ſometimes given to the principal argument made uſe of by each ſect of ancient philoſophers in defence of their ſyſtem.

Tendo ACHILLES, in anatomy is the tendon formed by the tails of ſeveral muſcles, and inſerted into the os calcis. It has its name from the fatal wound Achilles is ſaid to have received before the walls of Troy.

ACHOR, in phyſic, a ſpecies of the herpes, and appears with a cruſted ſcab, formed by a humour ſomewhat viſcid, and reſembling ichor. It is occaſioned by a ſalt ſharp ſerum oozing through the ſkin.

ACID, a name for every thing that affects the organs of taſte with a pungent ſourneſs. Acids are the moſt ſimple of all ſaline ſubſtances with regard to their taſte; and by that particular they are chiefly known. They have alſo the property of turning all the blue and violet colours of vegetables red, which diſtinguiſhes them from all other ſalts. The form under which acids moſt commonly appear, is that of a tranſparent liquor; though ſolidity is their natural ſtate. This is owing to their affinity with water; which is ſo great, that, when they contain but juſt as much of it as is neceſſary to conſtitute them ſalts, and conſequently have a ſolid form, they rapidly unite with that fluid the moment they come into contact with it: and, as the air is always loaded with moiſture, and aqueous vapours, its contact alone is ſufficient to liquify acid ſalts; becauſe they unite with its humidity, imbibe it greedily, and by that means become fluid. We therefore ſay, they attract the moiſture of the air. This change of a ſalt from a ſolid to a fluid ſtate, by the ſole contact of the air, is alſo called deliquium; ſo that when a ſalt changes in this manner from a ſolid into a fluid form, it is ſaid to run *per deliquium*. Acids have a great affinity with earths: that with which they moſt readily unite, is that called abſorbent earth. They ſeem to exert no action at all upon vitrifiable earths, ſuch as ſand, and ſome other kinds, at leaſt while they continue in their natural ſtate. When an acid liquor is mixed with an abſorbent earth, for inſtance with chalk, theſe two ſubſtances inſtantly unite with ſo much impetuoſity, eſpecially if the acid liquor be thoroughly dephlegmated, that a great ebullition is immediately produced, attended with conſiderable hiſſing, heat, and vapours, which riſe the very inſtant of their conjunction. From the combination of an acid with an abſorbent earth, there ariſes a new compound, which ſome chemiſts have called *ſal ſalſum*; becauſe the acid, by uniting with the earth, loſes its ſour taſte, and acquires another not unlike that of the common ſea ſalt; yet varying according to the different ſorts of acids and earths combined together. The acid at the ſame time loſes its property of turning vegetable blues and violet colours, red.

Univerſal or *Vitriolic* ACID is ſo called becauſe it is in fact the acid which is moſt univerſally diffuſed through all nature, in waters, in the atmoſphere, and in the bowels of the earth. But it is ſeldom pure, being almoſt always combined with ſome other ſubſtance. That from which we obtain it with moſt eaſe, and in the greateſt quantity is vitriol: and this is the reaſon why it is called the vitriolic acid, the name by which it is generally known. See VITRIOL.

When the vitriolic acid contains but little phlegm, yet enough to give it a fluid form, it is called oil of vitriol. See *Oil of* VITRIOL.

If the vitriolic acid contain much water, it is then called *Spirit of* VITRIOL. When it does not contain enough to render it fluid, and ſo is in a ſolid form, it is named the *Icy Oil of* VITRIOL. When oil of vitriol highly concentrated is mixed with water, they ruſh into union with ſuch impetuoſity, that the moment they touch each other, there ariſes a hiſſing noiſe like that of red iron plunged in cold water, together with a very conſiderable degree of heat proportioned to the degree in which the acid was concentrated. If, inſtead of mixing this concentrated acid with water, you only leave it expoſed to the air for ſome time, it attracts and imbibes the moiſture. Both its bulk and its weight are increaſed by this acceſſion; and if it be under an icy form, that is, if it be concreted, the phlegm thus acquired will ſoon reſolve itſelf into a fluid. The addition of water renders the vitriolic acid, and indeed all other acids, weaker in one ſenſe; that is, they leave on the tongue a much fainter taſte of acidity, and are leſs active in the ſolution of ſome particular bodies; but occaſions no change in the ſtrength of their affinities; it even, in ſome caſes, enables them to diſſolve ſeveral ſubſtances, which, when well dephlegmated, they are incapable of attacking. The vitrolic acid, combined to the point of ſaturation with a particular abſorbent earth, the nature of which is not yet well known, forms a neutral ſalt that cryſtallizes. This ſalt is called *Alum*, and the figure of its cryſtals is that of an octahedron or ſolid of eight ſides. See ALUM.

The vitriolic acid is capable of uniting with the phlogiſton, or rather it has a greater affinity with it than with any other body: whence it follows that all compounds, of which it makes a part, may be decompoſed by means of the phlogiſton. From the conjunction of the vitriolic acid with the phlogiſton, ariſes a compound called *Mineral Sulphur*; becauſe it is found perfectly formed in the bowels of the earth. It is alſo called ſulphur vivum, or ſimply, ſulphur. See SULPHUR.

Nitrous ACID, a particular kind of acid, which combined with an alkaline ſalt, forms a body called nitre. See NITRE. It is not certainly known what conſtitutes the difference between the nitrous and the vitriolic acid, with regard to the conſtituent principles of each. The nitrous acid, combined with certain abſorbent earths, ſuch as chalk, marble, boles, forms neutral ſalts which do not cryſtallize; and which, after being dried, run in the air *per deliquium*.

All thoſe neutral ſalts, which conſiſt of the nitrous acid, joined to an earth, may be decompoſed by a fixed alkali, with which the acid unites, and deſerts the earth; and from this union of the nitrous acid, with a fixed alkali, reſults a new neutral ſalt, which is called *Nitre* or *Salt-Petre*. See NITRE.

The nitrous acid hath not ſo great an affinity with earths and alkalis, as the vitriolic acid hath with the ſame ſubſtances; whence it follows, that the vitriolic acid decompoſes all neutral ſalts ariſing from a combination of the nitrous acid, with an earth or an alkali. The vitriolic acid expels the nitrous acid, unites with the ſubſtance which ſerved it for a baſis, and forms therewith a neutral ſalt, which is either an alum, a ſelenites, or a vitriolated tartar, according to the nature of that baſis.

The nitrous acid, when thus ſeparated from its baſis by the vitriolic acid, is named *Spirit of Nitre*, or *Aqua Fortis*. See *Spirit of* NITRE, and AQUA *Fortis*.

Marine ACID, or the ACID *of Sea-Salt*, an acid as is obtained from ſuch ſea-ſalt as is generally uſed in kitchens. See *Spirit of* SEA-SALT. The acid of ſea-ſalt, like the other two, ſeems to have a greater affinity with the phlogiſton than with fixed alkalis. We are led to this opinion by a very curious operation, which gives reaſon to think that ſea-ſalt may be decompoſed by the proper application of a ſubſtance containing the phlogiſton. From the marine acid, combined with a phlogiſton, reſults a kind of ſulphur, differing from the common ſort in many reſpects; but particularly in this property, that it takes fire of itſelf upon being expoſed to the open air. This combination is called *Phoſphorus*. See the article PHOSPHORUS. From what has been ſaid of the union of the acid of ſea-ſalt with a fixed alkali, and of the neutral ſalt reſulting from that combination, it may be concluded that this neutral ſalt is no other than the common kitchen ſalt. But it muſt be obſerved that the fixed alkali, which is the neutral baſis of the common ſalt obtained from ſea-water, is of a ſort ſomewhat different from fixed alkalis in general, and hath certain properties peculiar to itſelf. If the acid of ſea-ſalt be ſeparated from its baſis, by means of the vitriolic acid, it is eaſy to ſee that, when the operation is finiſhed, the ſalt we have been ſpeaking of muſt be the reſult. Glauber, a famous chymiſt, was the firſt who extracted the ſpirit of ſalt in this manner, examined the neutral ſalt reſulting from his proceſs, and finding it to have ſome ſingular properties, called it his *Sal mirabile*, or wonderful ſalt: on this account it is ſtill called Glauber's *Sal mirabile*, or plainly Glauber's ſalt. See SAL *mirabile Glauberi*.

When the baſis of ſea-ſalt is combined with the nitrous acid to the point of ſaturation, there reſults a neutral ſalt, or a ſort of nitre, differing from the common nitre; firſt, in that it attracts the moiſture of the air pretty ſtrongly, and this makes it difficult to cryſtallize; ſecondly, in the figure of its cryſtals, which are parrallelopipeds; and this has procured it the name of quadrangular nitre.

Common ſalt, or the neutral ſalt, formed by the combining the marine acid with this particular ſort of fixed alkali, has a taſte well known to every body. The figure of its cryſtals is exactly cubical. It grows moiſt in the air, and when expoſed to the fire, it burſts before it melts into many little fragments, with a crackling noiſe; which is called the decrepitation of ſea-ſalt.

That neutral ſalt mentioned above, which is formed by combining the marine acid with a common fixed alkali, and called ſal febrifugum ſylvii, hath alſo this property.

Vegetable ACID. See TARTAR and VINEGAR.

Animal ACID. See ANALYSIS *of Animal Subſtances*.

ACIDS, in the materia medica, are medicines poſſeſſed of an acid quality; as vinegar, tartar, the juice of lemons, and other vegetable productions, ſpirit of vitriol, &c.

All fermenting juices, ſays Dr. Cheyne, as acids plainly are, muſt be highly injurious to weak conſtitutions; for by meeting with crudities in the bowels, they muſt raiſe a new conflict and colluctation there, and ſo muſt blow up the cavities of the human body with acrid fumes and vapours, the great and ſore enemies to ſuch bowels. But we cannot help thinking that this cenſure is too general; and that the vinous acids ſhould have been excepted. It is indeed well known that, in the Weſt Indies, where the violence of the heat renders it necſſary to drink large quantities, and the want of proper liquors obliges them to drink much punch, the acid of the lemons and oranges, though in their full perfection, cauſes that nervous and mortal diſtemper, called the *dry belly ache*, as well as palſies, cramps, and convulſions. But we apprehend, that if cream of tartar was ſubſtituted inſtead of the acid of lemons and oranges, theſe terrible diſeaſes would be avoided, at leaſt as far as the acid can be ſuppoſed to cauſe them: and it ſhould be remembered that the ancient Romans were ſo fully perſuaded of the virtues of vinous acids, that the drink of their common ſoldiers was water mixed with vinegar, a compoſition which they called *Poſca*. Hippocrates ſays, that vinegar is refreſhing, for which reaſon it was given to reapers and thoſe who worked in the field.

ACIDITY, that quality in bodies which renders them acid. See ACID.

ACIDULÆ, a name given to mineral waters which are ſuppoſed to be impregnated with ſome acid; an opinion which later obſervations have proved to be deſtitute of foundation. It is however ſtill uſed as an appellation of cold mineral waters, to diſtinguiſh them from thoſe that are hot. See *Medicinal* WATERS.

ACINI, in botany, a name applied to grapes or berries growing in cluſters, to diſtinguiſh them from *baccæ*, or ſuch as grow ſingle.

ACINIFORMIS *Tunica* in anatomy, the ſame with Uvea. See UVEA.

The word is compounded of *acinus*, a grape, and *forma*, ſhape.

* ACIS, in fabulous hiſtory, the ſon of Faunus and Simetheis, a beautiful ſhepherd of Sicily, who being beloved by Galatea, Polyphemus the giant was ſo enraged, that he daſhed out his brains againſt a rock; after which Galatea turned him into a river, which was afterwards called by his name.

ACLONIA, in botany, a plant common in Guinea, where the inhabitants uſe it to cure the itch. Its leaves reſemble thoſe of the gum-tragacanth ſhrub, and is thought to be a ſpecies of the colutea.

ACKME, in a general ſenſe, implies the height, ſummit, or point of any thing. The word is formed from the Greek.

ACKME, among phyſicians, ſignifies that ſtate of a diſeaſe when it is increaſed to its utmoſt violence.

ACOEMETÆ, or ACOEMETI, in eccleſiaſtical hiſtory, an ancient order of monks among the eaſtern chriſtians, who continued a perpetual courſe of divine ſervice; ſo that their churches were never ſilent.

The word takes its derivavtion from the Greek.

There are ſtill a kind of Acoemetæ ſubſiſting in the Roman church, uſually called the religious of the holy ſacrament, who keep up a perpetual adoration, ſome or other of them praying before the hoſt day and night.

ACOLIN, in natural hiſtory, the name of a bird common in the Spaniſh Weſt Indies. It is of the partridge kind; but not larger than the ſtarling.

ACONEROBA, in botany, a plant growing in Guinea, greatly eſteemed for its virtues in the ſmall-pox. Its leaves reſemble thoſe of our bay, and grow in pairs.

ACONITE, a genus of plants, known among us by the name of wolfsbane and monkſhood.

The flower of the aconite is of the polypetalous, anomalous kind, being compoſed of five irregular leaves, reſembling in ſome meaſure a man's head, with a helmet or hood on it. The upper petal repreſents the hood or helmet; the two latter ones ſtand for that part which covers the lower jaw; and the two wings ſeem adapted for covering the temples. From the center of the flower there ariſe two piſtils, reſembling feet, and received into the hollow of the upper petal, or hood; as is alſo another piſtil, which finally becomes a fruit, compoſed of ſeveral membranaceous vaginæ, collected into a head, and uſually containing angular and wrinkled ſeeds.

All the ſpecies of aconite are extremely acrimonious, and the only one ever uſed in medicine is called anthora. See ANTHORA.

ACONTIAS, in zoology, a ſpecies of ſerpent, otherwiſe called jaculum, or the dart, from its vibrating its body in the manner of a dart.

The word is derived from the Greek.

Belon met with it in the iſle of Rhodes, and acquaints us that it is three palms in length, and about the thickneſs of a man's little finger; of a whitiſh aſh colour, except the belly, which is entirely white, and a few little ſpots like eyes upon the back. The neck is black, and from thence there run two white lines along the back to the tail. The ſpots, which are black, are no bigger than a lentil, and encompaſſed with a white circle. Authors affirm that they get upon trees, from whence they dart themſelves upon people as they paſs along, and that their bite is mortal. They are common in Egypt, Lybia, and the iſlands of the Mediterranean ſea. Late authors mention different kinds of theſe ſerpents; and the following deſcriptions have been ſent to Europe from different parts of the world. Seba ſpeaks of three kinds of darts, the firſt of which has a pointed tail, armed with two hard ſtings like the forked tongues of ſome ſerpents. They lurk in hollow trees, where they wait for their prey, and dart upon it with great ſwiftneſs.' This kind has a long head, large eyes, and jaws, well furniſhed with ſharp teeth. The ſcales that cover the forehead and upper part of the body are uniform, regularly placed, and of a reddiſh blue colour, except a furrow in the middle, which is white; but the ſcales under the belly are of a pale yellow, mottled with red ſpots. This ſerpent was ſeen at Santa-cruz in America. The dart of Amboyna is called by the Dutch ſpait-ſlang, or the ſyringe-ſerpent, becauſe it raiſes itſelf as ſwiftly as water ejected from a ſyringe. It is as thick as a man's arm, ſix feet in length, and covered with ſcales diſpoſed in the form of lozenges, tinged with a reddiſh brown, thoſe on the back and ſides of a ſea-green, and thoſe on the belly of a bright aſh colour. The ſkin is ſmooth, and the head of the middle ſize: the eyes are very large and ſhining; the teeth ſmall, and the tail long and pointed. The acontia, found in New Spain, is covered with yellow and reddiſh ſcales, placed in the form of lozenges, divided along the middle by ſtreaks running from the head to the end of the tail. The head is covered with yellow ſcales, ſpeckled with red, and all its joints are of an orange colour; but the ſcales on the belly are of a reddiſh yellow. *Brookes's Natural Hiſtory.*

ACONTIAS, in natural hiſtory, a name applied to a kind of comet or meteor, with a roundiſh or oblong head, and a long ſlender tail reſembling a dart or javelin: whence it has its name.

ACOPIS, in natural hiſtory, a precious ſtone tranſparent like glaſs, and ſpotted with a gold colour. *Pliny.*

ACOPOS, in botany, is the name of a plant mentioned by Pliny, who ſays it is the anagris of Dioſcorides, and which Gerard conſidered as a ſpecies of trefoil.

ACORN, the fruit of the oak. See Oak.

AÇORN, a genus of ſhell-fiſh, of which there are ſeveral ſpecies. The ſhells of theſe fiſh are of a longiſh ſhape, reſembling that of an acorn, and compoſed of ſeveral valves from ſix to twelve in number; but not moveable like thoſe of the bivalve kind, being fixed to each other by an intermediate ſubſtance.

The great furrowed Acorn-Shell, *with a large mouth*, is the biggeſt of this kind, being about an inch and a half in height, and about an inch in diameter, where largeſt. It is broad at the baſe, and firmly fixed to a ſolid ſubſtance, and nearly of the ſame diameter at the top as at the baſe, where it is wide open. The mouth is not exactly round, nor the dyes even; it is compoſed of twelve valves, touching at the baſe, but receding from each other at the top.

The faſhioned ACORN-SHELL, *with a large mouth*, is uſually found in great cluſters, fixed to each other at the tops, which makes the ſurface of the whole appear like net-work, but there are large cavities underneath between their bodies.

The low ACORN-SHELL, *with a large mouth*, is three quarters of an inch high, and above half an inch in diameter. Theſe are found in large cluſters, and ſo cloſely connected, that the inner ſurface is more viſible than the outer. The colour of this ſhell is a pale whitiſh grey, with a mixture of brown, and a ſmall tinct of red.

The narrow-mouthed oval and greyiſh-red ACORN-SHELL is uſually found in cluſters of twenty or more together. They do not all ſtand upright, but are very cloſe at the baſe. A ſingle ſhell is about half an inch long, and a third of an inch in diameter, but ſomewhat narrower at the baſe than elſewhere.

The narrow-mouthed ſlender ACORN-SHELL is three quarters of an inch high, and one third of an inch in diameter, where largeſt, which is a little lower than the middle.

The purple narrow-mouthed and ſlender ACORN-SHELL is three quarters of an inch high, and a little more than a third of an inch in diameter. It is largeſt at the baſe, from whence it grows gradually ſmaller to the top. Each ſhell is compoſed of ſix ribs, which touch each other at the baſe, and are connected by a thin ſhelly matter. The ribs are flatted with deep, but not regular furrows, running longitudinally.

The greyiſh-white furrowed ſlender ACORN-SHELL is ſeldom more than a third of an inch long, and two thirds leſs in its diameter.

The ſlender ACORN-SHELL, *with a narrow mouth*, is about half an inch in height, and hardly a quarter in diameter where largeſt, which is towards the middle, from whence it grows gradually ſmaller. The colour is of a duſky browniſh yellow on the ribs, and of a paler yellow between them. They are twelve in number, roundiſh and very narrow, ſtanding at ſmall diſtances from each other. It is brought from the Eaſt Indies, and is found ſticking to the bottom of the ſhips that come from thence. *Brookes's Natural Hiſtory.*

ACOUSTIC, an epithet applied to ſuch particulars as relate to the ear, or the ſenſe of hearing.

The word is formed from the Greek, ſignifying to hear.

ACOUSTIC *Duct*, in anatomy, a name ſometimes given to the external paſſage of the ear. See EAR.

ACOUSTIC *Inſtrument*, a tube reſembling in ſome meaſure a horn, the ſmaller end of which is placed in the ear, by which means the ſound is augmented, and acts with greater force on the organ of hearing.

ACOUSTIC *Medicines*, ſuch as are proper for the cure of deafneſs. See DEAFNESS.

ACOUSTIC *Nerve*, the ſame with auditorius or the auditory nerve.

ACQUIETANDIS *Plegiis*, in law, a writ that lies for a ſurety againſt a creditor who refuſes to acquit the complainant after the debt is paid.

ACQUITTAL, in law, implies a deliverance, or the freeing a perſon from the ſuſpicion of guilt.

ACQUITTAL is alſo uſed to imply a freedom from entries and moleſtations of a ſuperior lord for ſervice iſſuing out of lands.

ACQUITTANCE, a releaſe or diſcharge in writing for a ſum of money, witneſſing that the party has paid the ſaid ſum. No man is obliged to pay a ſum of money if the demandant refuſes to give an acquittance or receipt which is a full diſcharge, and bars all actions, &c. An acquittance given by a ſervant for a ſum of money received for the uſe of his maſter, ſhall be a good diſcharge for that ſum, provided the ſervant uſed to receive his maſter's rents, debts, &c.

ACRASIA, among phyſicians, implies the predominancy of one quality above another, either with regard to artificial mixtures, or the humours of the human body.

ACRE, a meaſure of land containing one hundred and ſixty ſquare poles or perches. This word is formed from the Saxon *acker*, or the German *acker*, a field.

The word acre did not originally ſignify a determined quantity of land, but any open ground, eſpecially a wide campaign: and, in this antique ſenſe, it ſeems to be preſerved in the names of places, as Caſtle-acre, Weſt-acre, Long-acre, &c. When the word was applied to the meaſure of ground, the quantity was various till the thirty third year of Edward I. when it was determined by act of parliament.

ACRE-TAX, a tax levied upon lands at a certain rate, by the acre, otherwiſe called acre-ſhot.

ACRID, an epithet applied to things of a ſharp, pungent, and diſagreeable taſte.

The word takes its origin from the Greek.

ACRIMONY, that quality in things which renders them acrid.

ACRIMONY *of the Humours*, a malignant quality which the fluids of the human body often acquire from a great variety of cauſes; particularly from a ſtagnation, or too violent a motion.

ACROMION, in anatomy, is a name given to the epophiſe or upper part of the ſcapula, or ſhoulder-blade, produced by an eminence called epinus.

The word is a compound from the Greek.

ACRONYCAL, in aſtronomy, an appellation given to the riſing of a ſtar above the horizon at ſun-ſet; or its ſetting at ſun-riſing; for, in either caſe, the ſtar is ſaid to riſe and ſet acronycal.

The word is formed from the Greek.

ACROSPIRED, in malt-making, is a term applied to ſuch grains of the barley as ſhoot or ſprout out both at the blade and root end. See the article MALT.

ACROSTIC, in poetry, a poetical compoſition diſpoſed in ſuch a manner, that the initial letters of the verſes form the name of ſome perſon, kingdom, place, motto, &c.

The acroſtic is conſidered by the critics as a ſpecies of falſe wit, and is therefore very little regarded by the moderns. It is ſeldom attempted but by mere dabblers in poetry.

ACROSTIC, is alſo a name given to two epigrams in the Anthologia, one of which is in honour of Bacchus, and the other of Apollo.

ACROSTICUM, in botany, a name given by Linnæus to the ruta muraria of Tournefort, a diſtinct ſpecies of moſſes.

ACROTERIA, in architecture, ſmall pedeſtals upon which globes, vaſes, or ſtatues, are placed at the end or center of pediments, or frontiſpieces. The height of the acroteria at the extremities ſhould be only one half of that of the tympanum; whereas that in the center ought to be one eighth more.

ACROTERIA alſo ſignify the figures placed as ornaments or crownings on the tops of churches: and ſometimes thoſe ſharp pinnacles, ſtanding in rows about flat buildings, with rails and baluſters are called acroteria.

ACT, in its general ſenſe, implies whatever is performed either by the body or mind.

ACT, in dramatic poetry, ſignifies a certain diviſion, or part of a play or dramatic performance, deſigned to give ſome reſpite both to the actors and ſpectators.

The Romans were the firſt that divided their theatrical pieces into acts; for no ſuch diviſions appear in the works of the firſt dramatic poets. Their pieces indeed conſiſted of ſeveral parts or diviſions, which they call protaſis, epitaſis, cataſtaſis, and cataſtrophe; but theſe diviſions were not marked by any real interruptions on the theatre. Nor does Ariſtotle mention any thing of acts in his Art of Poetry. In the time of Horace however, all regular and finiſhed pieces were divided into five acts.

The firſt act, ſay ſome critics, beſides introducing upon the ſtage, the principal characters of the play, ſhould propoſe the argument or ſubject of the piece; the ſecond ſhould exhibit this to the audience, by carrying the fable into execution: the third ſhould raiſe obſtacles and difficulties: the fourth remove theſe, or raiſe new ones in the attempt: and the fifth conclude the piece, by introducing ſome accident that may unravel the whole affair.

The abbe Vatry is of opinion, that ſome pieces may, with propriety, conſiſt only of three acts, and others even of more than five; becauſe it is no ways eſſential that a tragedy ſhould conſiſt of fifteen or ſixteen hundred verſes. The diviſion into five acts is then an arbitrary rule, which may be violated without ſcruple. M. Voltaire has already got the better of that ancient prejudice in his *Death of Cæſar*, which, though an excellent tragedy, conſiſts of no more than three acts; and we have, in the Engliſh language, ſome of the ſame kind no way inferior to M. Voltaire's.

Acts are divided into ſcenes; and Voſſius remarks, that among the ancients, an act never contained more than ſeven ſcenes; but with us there is no fixed rule as to their number.

ACTS *of the Apoſtles*, one of the ſacred books of the New Teſtament, containing the hiſtory of the infant church, during the ſpace of twenty-nine or thirty years, from the aſcenſion of our Lord to the year of Chriſt 63.

It was written by St. Luke, and addreſſed to Theophilus, the perſon to whom that evangeliſt had before dedicated his Goſpel. We here find the accompliſhment of ſeveral of the promiſes made by our Saviour, his aſcenſion, the deſcent of the Holy Ghoſt, the firſt preaching of the apoſtles, and the miracles whereby their doctrines were confirmed; an admirable picture of the manners of the primitive Chriſtians, and every thing that paſſed in the church till the diſperſion of the apoſtles, who ſeparated themſelves in order to propagate the Goſpel throughout the world. The ſtile of this work which was originally compoſed in Greek, is much purer than that of the other canonical writers; and it is obſervable, that St. Luke, who was much better acquainted with the Greek than with the Hebrew language, always in his quotations from the Old Teſtament, makes uſe of the Septuagint verſion. The council of Laodicea places the Acts of the Apoſtles among the canonical books, and all the churches have acknowledged it as ſuch.

ACT, in the univerſities, ſignifies a theſis maintained in public by a candidate for a degree, or to ſhew the capacity and proficiency of a ſtudent.

The candidates for a degree of bachelor and maſter of arts are to hold philoſophical acts; and thoſe for bachelor of divinity, theological acts, &c.

At Oxford, the time when maſters or doctors complete their degrees is alſo called the *act*, which is held with great ſolemnity. At Cambridge they call it the *commencement*.

ACT *of Faith*, in the Romiſh church, a day appointed by the inquiſition for the puniſhment of heretics, and the abſolution of the innocent. The criminals are firſt led to church, where their ſentence, either of condemnation or abſolution, is pronounced, and the criminals ſurrendered up to the ſecular power. This is the laſt ſcene of a court which is at once a diſhonour to religion, and a diſgrace to humanity.

ACT, in philoſophy, an effective application of ſome power or faculty. In this ſenſe act ſtands oppoſed to power, or the capacity of acting, not the exertion of that capacity. The word act is indeed properly and primarily only applicable where the power might exiſt, without being exerted: but the ſchoolmen extend it further, defining it by the preſence of any power or perfection, even though it could not be abſent; in which ſenſe God himſelf is ſaid to be a moſt pure act, becauſe his perfections are always and neceſſarily preſent.

ACT, in logic, is particularly underſtood of an operation of the human mind. Thus to diſcern and examine are acts of the underſtanding; to judge and affirm are acts of the will.

There are voluntary and ſpontaneous acts; the former are produced by the operation of the ſoul: the latter without its privity and participation.

ACT *of Parliament* is a poſitive law, conſiſting of two parts, the words of the act, and its true ſenſe and meaning; which being joined, make the law. The The words of *Acts of Parliament* ſhould be taken in a lawful ſenſe. Caſes of the ſame nature are within the intention, though without the letter of the act; and ſome acts extend by equity to things not mentioned therein.

ACTIAN *Years*, in chronology, a ſeries of years reckoned from the æra of the battle of Actium, otherwiſe called the æra of Auguſtus.

ACTION, in its general ſenſe, implies nearly the ſame thing with act. See ACT.

Grammarians, however, obſerve ſome diſtinction between *action* and *act*; the former being generally applied to the common or ordinary tranſactions; whereas the latter is uſed to expreſs thoſe which are remarkable. Thus we ſay, it is a good *action* to comfort the diſtreſſed; it is a generous *act* to deprive ourſelves of what is neceſſary for their ſake. The wiſe man propoſes to himſelf an honeſt end in all his *actions*. A prince ought to mark every day of his life with ſome *act* of greatneſs.

ACTION, in mechanics, the effort which a body or power makes againſt another body or power, or the effect itſelf of that effort.

It being neceſſary in works of this kind to have a particular regard to the common language of mechanics and philoſophers, we have given this double definition: but the proper ſignification of the term is the motion which a body really produces, or tends to produce in another; that is, ſuch is the motion it would have produced had nothing hindered its effect. All power is nothing more than a body actually in motion, or which tends to move itſelf: that is, a body which would move itſelf if nothing oppoſed it. The action therefore of a body is rendered evident to us by its motion only, and conſequently we muſt not fix any other idea to the word action, than that of actual motion, or a ſimple tendency to motion. The famous queſtion relating to *vis viva*, and *vis mortua*, owes in all probability, its exiſtence to an inadequate idea of the word action; for had Leibnitz and his followers obſerved, that the only preciſe and diſtinct idea we can give to the word force or action, reduces it to its effect, that is to the motion it actually produces or tends to produce, they would never have made that curious diſtinction. See FORCE.

M. de Maupertuis, in the memoirs of the Pariſian Academy of Sciences for 1744, and in thoſe of Berlin for 1746, lays it down as a general law, "that in the "changes made in the ſtate of a body, the "quantity of action neceſſary to produce "ſuch a change is the leaſt poſſible." This principle he applies to the inveſtigation of the laws of refraction, of equilibrium, &c. and even to the ways of acting, employed by the Supreme Being. In this manner M. de Maupertuis attempts to connect the metaphyſics of final cauſes with the fundamental truths of mechanics, to ſhew the dependance of the colliſion of both elaſtic and hard bodies upon one and the ſame law, which before had always been referred to ſeparate laws; and to reduce the laws of motion, and thoſe of equilibrium, to one and the ſame principle.

It is remarkable that of the many philoſophers who have treated on the ſubject of refraction, none ſhould fall upon ſo ſimple a manner of reconciling metaphyſics with mechanics; ſince no more is neceſſary than the making a ſmall alteration in the calculus founded upon M. de Fermat's principle. In reality, according to that principle, the time, that is, the ſpace divided by the velocity, ſhould be a minimum: ſo, calling the ſpace run through in the firſt medium S, with the velocity V, and the ſpace run through in the ſecond medium s, with the velocity v, we ſhall have $\frac{S}{V}+\frac{s}{v}=$ a minimum; that is, $\frac{\dot{S}}{V}+\frac{\dot{s}}{v}=0$. Now it is eaſy to perceive, that the ſines of incidence and refraction are to each other as $\dot{S}$ to $-\dot{s}$; whence it follows, that thoſe ſines are in the direct ratio of the velocities V, v, which is agreeable to M. de Fermat's rule. But in order to have thoſe ſines to be in the inverſe ratio of the velocities, it is only ſuppoſing $\dot{V}S+\dot{v}s=0$, which gives $S\times V+s\times v=$ a minimum. See MINIMUM.

In the memoirs of the academy of Berlin, may be ſeen the other applications M. de Maupertuis has made of this principle. And we will add, that whatever may be determined with regard to the metaphyſical baſis of this principle, and even to the conception he has annexed to the quantity of action, it will hold good, that the product of the ſpace by the velocity is a minimum in the moſt general laws of nature.

ACTION, in poetry, the ſubject or fable of the poem, or play.

Critics generally diſtinguiſh two kinds, the *principal*, and the *incidental*. The principal action is what is generally called the fable, and the incidental an epiſode. See the article EPISODE.

As poems are divided into epic and dramatic, ſo each of theſe has its particular action. That of the dramatic poem ought to be one, intricate, unravelled, and complete: but at the ſame time much ſhorter than that of an epic poem.

The action of an epic poem ought to be great, one, entire, marvellous, and of a competent duration.

Firſt, it ought to be great, that is, noble and intereſting; a common ordinary adventure not furniſhing the inſtructions intended to be conveyed by an epic poem. The action muſt be important and heroic. Thus, in the Æneid, a hero eſcaped from the ruins of his country, wanders a long time with the remainder of his fellow-citizens, who had choſe him for their leader, and, in ſpight of Juno's anger, who purſues him without intermiſſion, he arrives in a country which the Fates had promiſed him; defeats very formidable enemies; and, after ſurmounting a thouſand difficulties, with a ſagacity equal to his valour, he there lays the foundation of a powerful empire.

There are two methods of rendering the epic action intereſting: the firſt, by the dignity and importance of the perſonages; this is the artifice of Homer, who has nothing elſe important in his models; every other particular might happen to common perſons. The ſecond is the importance of the action in itſelf, as the eſtabliſhment or abolition of ſome religion or ſtate; ſuch is the ſubject choſen by Virgil, and in this he doubtleſs excels Homer. The action of the Henriade, by Voltaire, re-unities, in a pleaſing manner, this double advantage. But Milton, in both particulars, excels them all.

F. le Boſſu adds a third method for rendering the action intereſting, viz. the giving the readers an higher idea of the perſonages of the poem than what they commonly entertain of mankind; and by comparing the heroes of the poem with the preſent race of mortals.

The action ought to be one, that is, the poet ought to confine himſelf to one ſingle illuſtrious enterprize, executed by his hero, and not take the whole hiſtory of his life. The Iliad is no more than the hiſtory of the anger of Achilles, and the Odyſſey that of Ulyſſes's return to Ithaca. Homer would neither deſcribe the entire life of the latter, nor the whole of the Trojan war. On the contrary, Statius, in his Achilleid, as well as Lucan in his Pharſalia, has heaped together too many ſingle events, in order to give their works the name of epic poems. They may indeed be called heroic, becauſe they treat of heroes; but we muſt be careful not to confound the unity of the hero with the unity of the action. Epic poetry is not the praiſe of an hero, whom we propoſe as a model, but the recital of ſome great and illuſtrious action, which is given as an example.

In Poetry as in painting, the unity of the principal action does not hinder us from introducing ſeveral particular incidents, and thoſe incidents are called epiſodes. The deſign is formed from the beginning of the poem; the hero of it attains his end by ſurmounting every obſtacle; and it is the recitals of thoſe oppoſitions which make the epiſodes. However, all thoſe epiſodes depend upon the principal action, and are ſo connected with it, and ſo united with each other, that we never loſe ſight either of the hero or the action which the poet propoſes to celebrate.

The action of an epic poem ought to be marvellous; that is, full of bold actions, which have however an air of probability. Such is the intervention of heathen deities in the poems of the ancients, and that of the paſſions perſonified in thoſe of the moderns. But tho' the poet may ſometimes go beyond nature, he ought never to ſhock reaſon. An action may be either ſagaciouſly or ridiculouſly marvellous.

With regard to the duration of the action of an epic poem, Ariſtotle obſerves, that it is leſs confined than that of tragedy. The latter ought to be included in the ſpace of one day, or, as they ſay, between two ſuns; but an epic poem is not confined in reſpect to time. In fact, tragedy is replete with violent paſſion, and nothing that is violent can be of long duration; but virtues and habitudes, which are not acquired inſtantaneouſly, are proper for an epic poem, and conſequently its action ought to have a greater extent. F. le Boſſu lays it down as a rule, that the more violent the paſſions of the principal perſons are, the leſs time the action ought to laſt; and conſequently that the action of the Iliad, the ſoul whereof is Achilles's anger, laſts but ſeven and forty days; whereas that of the Odyſſey, where prudence is the prevailing quality, laſts eight years and a half; and that of the Æneid, where the principal perſonage is a pious and humane hero, nearly ſeven years. But the rule of the above author is not inconteſtable, nor are his ſentiments, either with regard to the duration of the Odyſſey or that of the Iliad, exact; for though the epopee may include in its narration the actions of ſeveral years, yet the critics are generally of opinion, that the time of the principal action, from the place where the poet begins his narration, ſhould not be longer than one year, as the time of the action of a tragedy ought to be at moſt but one day. Ariſtotle and Horace, however, ſay nothing of this matter: but the examples of Homer and Virgil prove it. The duration of the Iliad is but forty-ſeven days: the Odyſſey does not commence till the departure of Ulyſſes from the iſland of Ogygia: and the Æneid at the tempeſt which threw Æneas upon the coaſt of Carthage. Now, reckoning from theſe two epochs, the action of the Odyſſey is but of two months continuance, and that of the Æneid one year. It is true that Ulyſſes, while with Alcinous, and Æneas, while he ſtays with Dido, relate their paſt adventures; but theſe recitals are introduced merely as ſuch, in the duration of the principal action, and the courſe of years which were taken up by thoſe events make no part of the duration of the poem; as in tragedy, the events related in the protaſis, and which only tend to explain the dramatic action, make no part of its duration; therefore the error of F. le Boſſu is ſufficiently evident.

ACTIONS, in ethics, the voluntary actions of a man, conſidered in reſpect to the imputation of their effects in common life.

By voluntary actions we mean thoſe which depend upon the human will, conſidered as a free agent, without whoſe determination, cauſed by ſome of its immediate acts, and preceded by the knowledge of the underſtanding, they cannot be performed, and conſequently the exiſtence or non-exiſtence of them is in the power of every perſon.

Human actions, include, in their eſſence, two particulars; their matter, and their form. The matter comprehends ſeveral particulars, as,

1. The phyſical motion of one of the natural faculties; for inſtance, of the motive faculty of the ſenſitive appetite, of the exterior and interior ſenſes, &c. We might alſo place in this claſs the acts of the will themſelves, conſidered ſimply in their natural exiſtence, ſo far as they are the effects flowing from a phyſical faculty.

2. The defect of ſome phyſical motion it is capable of producing; for we are equally obnoxious and puniſhable for the ſins of omiſſion as for thoſe of commiſſion.

3. It is not only our proper motions and habitudes, or the abſence of either in our own perſon, that can conſtitute the matter of our moral actions; but alſo the motions, the habits, and their abſence, which we find in others, provided the whole could and might be directed by our own will.

4. It is not the action of beaſts, or the operations of vegetables, and inanimated bodies in general, that can furniſh the matter of any moral action, ſince theſe ſpecies of beings are ſuſceptible of being directed by our will; and hence we ſee the reaſon why the owner of an ox that puſhes with his horns, was, by the Levitical law, obliged to make good the damage done by that beaſt, provided the owner was previouſly appriſed of the vicious nature of that creature.

5. The actions of another, of which we are the paſſive ſubject, may be the cauſe of a moral action, at leaſt ſo far as we have given room to commit ſuch action. Thus a woman, who has been violated, is conſidered as in ſome degree culpable, if ſhe imprudently expoſed herſelf by going to places where ſhe had no real buſineſs, and by that means put herſelf into the power of the raviſher.

The eſſence of moral actions conſiſts in their imputability, if we may be allowed to apply that term to the quality whereby the effects of voluntary actions may be imputed to the agent as their author; and hence the agent is called the moral cauſe.

ACTION, in the military art, an engagement between two armies, or different bodies of troops. It is alſo uſed to ſignify ſome memorable act performed by ſome officer or commander.

ACTION, in law, the right of demanding, in a legal manner, what is any man's due; or the proceſs brought for recovering the ſame.

ACTIONS are either criminal or civil.

Criminal ACTIONS are to have judgment of death, as murder, robbery, &c. or only judment for damage to the injured, fine to the king, and impriſonment. Under the head of criminal actions may alſo be ranked penal actions, which lie for ſome penalty or puniſhment, on the party ſued, whether it be corporal or pecuniary. Alſo actions upon the ſtatute, brought on breach of any ſtatute, or act of parliament, by which an action is given that did not lie before; as where a perſon commits perjury to the prejudice of another, the injured ſhall have an action upon the ſtatute.

And laſtly, popular actions, ſo called, becauſe any perſon may bring them on behalf of himſelf and the crown, by information, &c. for the breach of ſome penal ſtatute.

Civil ACTIONS are divided into real, perſonal, and mixt. *Real* ACTION is that whereby a man claims a title, lands, tenements, &c. in fee, or for life; and this action is either poſſeſſory, or anceſtral; poſſeſſory, where the lands are a perſon's own poſſeſſion or ſeiſin; anceſtral, when they were in the poſſeſſion or ſeiſin of his anceſtors. *Perſonal* ACTION, is that brought by one man againſt another, upon any contract for money or goods, or on account of treſpaſs, or other offence committed; and thereby the debt, goods, chattels, &c. claimed. *Mixt* ACTION, one lying as well for the thing demanded as againſt the perſon who has it; and on which the thing is recovered with damages for the wrong ſuſtained; ſuch is an action of waſte ſued againſt a tenant for life, the place waſted being recoverable, with treble damages, for the wrong done. All actions ſeem to be temporary. A real action may be preſcribed againſt in five years after a fine levied, or recovery ſuffered. Writs of formedon for any title to lands in being, muſt be ſued out within twenty years. Actions of debt, account, detinue, trover, and treſpaſs, are to be brought within ſix years; of aſſault and battery within four years; and of ſlander within two years, after cauſe of action, and not afterwards. However, it ought to be obſerved, that the right of action in theſe caſes is ſaved to infants, feme coverts, and perſons in priſon, or beyond ſea, &c. ſo as they commence their ſuits within the time limited after their imperfections are removed. Actions may be brought againſt all perſons whatever; but thoſe who are attained of high treaſon or felony, or outlawed or excommunicated perſon, &c. cannot bring any action till pardoned, abſolved, &c. A feme covert muſt ſue with her huſband, and infants by their guardians. ACTION *upon the Caſe*, a general action which lies for the redreſs of wrongs and injuries done without force, and which, by law, are not provided againſt. This at preſent is the moſt frequent of all actions, being brought in all caſes, where no certain form has been eſtabliſhed; and the reaſon why it is called an action upon the caſe, is becauſe the whole cauſe or caſe is ſet forth in the writ. It may be brought as well where there is another action, as where no other lies. ACTION *upon the Caſe for Words*, is brought where a perſon is injured in his reputation; and for words which affect the life, office, trade, &c. or tend to the loſs of preferment in marriage, or otherwiſe; or to the diſinheritance or other damage of a perſon. ACTION *of a writ*, is when a perſon pleads ſome matter by which is ſhewn, that the plaintiff had no cauſe to have the writ brought, though, perhaps, he may have another writ for the ſame matter. It is hence called a plea to the action of the writ, in contradiſtinction from a plea to the action.

ACTION, among phyſicians, is applied to the functions of the human body, whether vital, animal, or natural. Vital actions are thoſe without which life could not be maintained. Such is the motion of the heart and lungs. Under animal actions are comprehended the ſenſes, imagination, judgment, and voluntary motions, without which we could not live comfortably. Laſtly, natural actions, which, tho' not ſo immediately neceſſary to life but that we may live ſome time at leaſt without them, yet are abſolutely neceſſary to our well-being; ſuch is digeſtion.

ACTION, in commerce, is a term uſed abroad for a certain part or ſhare of a publick company's capital ſtock. Thus, if a company has 400,000 livres capital ſtock, this may be divided into 400 actions, each conſiſting of 1000 livres. Hence a man is ſaid to have two, four, &c. actions, according as he has the property of two, four, &c. thouſand livres, capital ſtock. The transferring of actions abroad is performed much in the ſame manner as ſtocks are with us. See the article STOCKS.

ACTION, in oratory, the expreſſion of the countenance, voice, geſture, &c. and which ought to be accommodated to the ſubject. Action, ſays Cicero, is the eloquence of the body; it has two parts, the voice and the geſture; the one ſtrikes the ears, and the other the eyes: the two ſenſes, ſays Quintilian, whereby we convey our ſentiments and paſſions into the ſouls of the hearers. Each paſſion has a tone of voice, and an air and a geſture peculiar and proper to it. The ancients uſed the word pronunciation in the ſame ſenſe; Demoſthenes conſidered this as the ſecond requiſite in eloquence, laying it down as an acknowledged truth, that a middling diſcourſe delivered with all the force and graces of action, will have a greater effect on the audience than the moſt eloquent diſcourſe deſtitute of that powerful charm.

ACTION, in horſemanſhip, implies the motion of the various parts of a horſe in doing his paces, &c.

ACTION *of the Mouth*, in horſemanſhip, ſignifies the motion of a horſe's mouth in champing on his bit, whereby he throws out a great deal of foam, which keeps his mouth always freſh. It is a mark of fire and vigour.

ACTION, in painting and ſculpture, the attitude or poſition of the ſeveral parts of the face, body, and limbs of ſuch figures as are repreſented, and whereby they ſeem to be really actuated by paſſions. Thus we ſay, the action of ſuch a figure finely expreſſes the paſſions with which it is agitated: we alſo uſe the ſame expreſſion with regard to animals.

ACTIVE, an epithet applied to that body or power which communicates motion to another: and, in this acceptation, the term *active* is oppoſed to *paſſive*.

Sir Iſaac Newton juſtly obſerves that the vis inertiæ, &c. of all bodies muſt have a tendency to diminiſh the quantity of motion in the univerſe; and conſequently that there is a neceſſity for certain active principles to recruit it: among which he places the cauſes of gravity and fermentation. He adds, that there is very little motion in the univerſe that does not flow from theſe principles: and, as the cauſe of gravity always ſubſiſts without being in the leaſt diminiſhed by a continual exertion of its force, it becomes a perpetual ſource of action.

ACTIVE *Principles*, in chemiſtry, are thoſe ſuppoſed to act of themſelves, without any neceſſity for the action of others.

The chemiſts, in general, diſtinguiſh the principles of bodies into *active* and *paſſive*. The former are ſpirit, oil, and ſalt; and thoſe of the latter, water and earth. But we cannot admit of this diſtinction; becauſe as thoſe principles are merely relative, they may become active in ſome reſpects, and paſſive in others. Nor does there appear the leaſt reaſon for placing water in the claſs of paſſive principles. Mr. Homberg, and ſeveral other chemiſts, make only one active principle, namely, ſulphur or fire, which they aſſert to be the ſource of every action in the univerſe. See the article Fire.

ACTIVE, in medicine, is applied to ſuch remedies as have a quick action, or exert their force ſuddenly and with vigour.

ACTIVE, in grammar, is applied to ſuch words as expreſs an action; and is therefore oppoſed to paſſive. The active performs the action, as the paſſive receives it. The fire *burns*, and the wood is *burned*. *Burns* is therefore an *active*, and *burned* a *paſſive* term.

Verbs are divided into active and paſſive: the former implies that the ſubject of the verb performs the action, as, *I love*; and the latter that the ſubject receives the action, as, *I am loved*.

We ſay that verbs have an active and a paſſive voice; that is, a ſucceſſion of terminations which expreſs an active ſenſe, and another ſeries of terminations that imply a paſſive ſenſe. This is undoubtedly juſt with regard to the Greek and Latin languages; but the Engliſh verbs have only an active voice, and it is by means of a periphraſis, and not by the aſſiſtance of a particular termination, that we expreſs a paſſive ſenſe.

ACTIVITY, the power of acting, or the active faculty.

ACTOR, in a general ſenſe, every perſon that acts.

ACTOR, with regard to the Theatre, a perſon who plays a part, or repreſents ſome character, in a dramatic performance. The women are called actreſſes, but comprehended under the general name of actors. The drama conſiſted originally of only a ſimple chorus, who ſung hymns in honour of Bacchus; ſo that the primitive actors were only ſingers and muſicians.

Theſpis was the firſt that, in order to eaſe this unformed chorus, introduced a declaimer, who repeated ſome heroic or comic adventure. Eſchylus, finding a ſingle perſon tireſome, attempted to introduce a ſecond, and changed the ancient recitals into dialogues. Before his time, the actors daubed themſelves with dregs of wine, and, being drawn upon a tumbrel, amuſed the ſpectators. Eſchylus was the firſt projector of theatres. He alſo dreſſed his actors in a more majeſtic manner, and introduced the cothurnus or buſkin. Sophocles added a third, in order to repreſent the various incidents in a more natural manner: and here the Greeks ſtopped; at leaſt we do not find in any of their tragedies above three perſons in the ſame ſcene; perhaps they looked upon it as a rule of the dramatic poem never to admit more than three ſpeakers at a time on the ſtage; a rule which Horace has expreſſed in the following verſe:

Nec quarta loqui perſona laboret.

This however did not prevent their increaſing the number of actors in comedy. Before the opening of a play, they named their actors in full theatre, together with the parts they were to perform. The moderns have ſometimes brought a greater number of actors upon the ſtage, in order to increaſe the buſineſs by the variety of perſons; but this has often occaſioned a confuſion in the conduct of the piece. The ancient actors were maſked, and obliged to raiſe their voice extremely, in order to make themſelves heard by the innumerable crowd of people who filled the amphitheatres: they were accompanied with a player on the flute, who played a prelude, gave them the tone, and played while they declaimed.

Actors were highly honoured at Athens, and deſpiſed at Rome, where they were not only denied all rank among the citizens, but even when any citizen appeared upon the ſtage, he was expelled his tribe, and deprived of the right of ſuffrage by the cenſors. Cicero, indeed, eſteems the talent of Roſcius, but he values his virtues ſtill more; virtues which diſtinguiſhed him ſo remarkably above all others of his profeſſion, that they ſeemed to have excluded him from the theatre. The French have, in this reſpect, adopted the ideas of the Romans; and the Engliſh thoſe of the Greeks.

ACTRESS, a woman who performs, repreſents, or acts ſome character on the ſtage.

ACTUAL, an epithet applied to ſuch things as abſolutely ſubſiſt. Philoſophers uſe the terms actual heat, actual cold, &c. in oppoſition to virtual or potential; and divines, that of actual grace in oppoſition to habitual.

ACTUAL *Sin*, what is committed by the perſon himſelf, in oppoſition to original ſin, or that he contracted from being a child of Adam.

ACTUARY, or ACTUARIUS, a clerk whoſe buſineſs it is to regiſter the acts and conſtitutions of the convocation.

Among the ancient Romans the actuary was a notary or clerk, who kept an account of the proviſions and corn delivered out to each ſoldier.

ACULEI, in natural hiſtory, the ſpines or prickles found upon ſeveral objects both in the animal and vegetable kingdom.

ACULER, in the manege, is ſaid of a horſe when in working upon volts, he does not go far enough forward at every motion, by which means his ſhoulders take up too little ground, and his croupe comes too near the center of the volt.

ACUS, in natural hiſtory, the name of two diſtinct genuſes of fiſhes, one called, in Engliſh, the needle or tobacco-pipe fiſh, and the other the gar-fiſh. The former is about a foot and a half in length, but not thicker than a man's finger. It has two very ſmall fins near the gills, and another on the back. The latter, often called the acus of Oppian, is alſo long and ſlender, and the back of a bluiſh green colour. The under mandible is longer than the upper, and both furniſhed with ſharp teeth.

ACUTE, an epithet applied to ſuch things as terminate in a ſharp point or edge; in which ſenſe it ſtands oppoſed to obtuſe.

The word is derived from the Greek.

ACUTE *Angle*, in geometry, that which is leſs than a right angle. See ANGLE.

ACUTE-ANGLED *Triangle*, a triangle whoſe three angles are all acute.

ACUTE-ANGLED *Cone*, according to the ancients, a right cone, whoſe axis makes an acute angle with its ſide.

ACUTE, in muſic, is applied to a ſound or tone that is ſharp or high, compared to ſome other tone. In this ſenſe, *acute* ſtands oppoſed to *grave*.

ACUTE *Accent*. See ACCENT.

ACUTE *Diſeaſe*, among phyſicians, that which moves with velocity to a criſis, and is attended with danger; in this ſenſe it is oppoſed to *chronical*.

ADAGE, a proverb, or popular ſentence, containing ſome remarkable obſervation.

The word, according to Scaliger, is compounded of *ad*, and *agor*.

ADAGIO, in muſic, the firſt and floweſt of the four principal degrees of time eſtabliſhed in the Italian muſic. When repeated, it ſignifies ſtill ſlower time. The word is an Italian adverb, and ſignifies ſlowly, leiſurely, &c.

ADAMANT, a name given by ſome to the diamond. See DIAMOND.

ADAMI *Pomum*, Adam's apple; in anatomy, a protuberance in the fore part of the throat.

ADAMICA *Terra*, in natural hiſtory, a ſalt, glutinous, fat, and mucilaginous ſubſtance, reſembling a jelly found at the bottom of the ſea.

ADAMITES, in eccleſiaſtical hiſtory, the name of a ſect of ancient heretics, ſuppoſed to have been a branch of the Baſilidians and Carpocratians. Epiphanius tells us, that they were called Adamites from their pretending to be re-eſtabliſhed in the ſtate of innocence, and to be ſuch as Adam was at the moment of his creation, whence they ought to imitate him in his nakedneſs. They deteſted marriage, maintaining that the conjugal union would never have taken place upon earth had ſin been unknown; and that the privilege of enjoying women, in common, was one of the rights which flowed from their eſtabliſhment in original purity.

This ſect did not laſt long; but it was revived in the twelfth century by one Tandamus, who propagated his errors at Antwerp, in the reign of the emperor Henry V. He maintained that there ought to be no diſtinction between prieſts and laymen; and that fornication and adultery were meritorious actions.

Tandamus had a great number of followers, and was conſtantly attended by three thouſand of theſe profligates in arms. His ſect did not however continue long after his death: but another appeared under the name of Turlupins, in Savoy and Dauphiny, where they committed the moſt brutal actions in open day. About the beginning of the fifteenth century, one Picard, a native of Flanders, ſpread theſe errors in Germany and Bohemia. Picard pretended he was ſent into the world, as a new Adam, to re-eſtabliſh the law of nature; and which, according to him, conſiſted in expoſing every part of the body, and having all the women in common. This ſect found alſo ſome partizans in Poland, Holland, and England.

ADAPTERS, or ADOPTERS, among chymiſts, veſſels in the form of hollow globes, with two mouths or apertures diametrically oppoſite to each other; one of which admits the neck of the retort; and the other is received either by the mouth of another adopter, or into the mouth of the receiver.

ADAR, the name of the twelfth month of the eccleſiaſtical, and the ſixth of the civil year among the Hebrews. It conſiſts of twenty-nine days, and anſwers to the latter end of our February and the beginning of March. The Jews faſt on the ſeventh of this month, on account of the death of Moſes; on the thirteenth in imitation of the Jews of Suſa, who then faſted to avert the evils with which they were threatened by Haman; on the fourteenth they celebrate the feaſt of Purim, in commemoration of their deliverance from the intended cruelty of Haman.

As the lunar year, which the Jews followed in their calculation, is ſhorter than the ſolar by about eleven days, which at the end of three years make a month, they then intercalate a thirteenth month, which they call *Veader*, or the ſecond Adar.

ADATIS, in commerce, a name given to the muſlins brought from the Eaſt Indies. The fineſt are thoſe of Bengal, and run about three quarters wide.

ADDER, the viper. See VIPER.

ADDER-STUNG; cattle are ſaid to be adder-ſtung when their udders are bit by the adder, or hedge-hog. The general method of curing this is by an ointment compoſed of dragon's blood, barley-meal, and the whites of eggs.

ADDER's TONGUE, in botany, the Engliſh name of the ophiogloſſum.

ADDICE, or ADZE, a kind of crooked ax, much uſed by ſhipwrights, coopers, &c.

* ADDISON, (Joſeph) was one of the brighteſt geniuſes this country has produced. He was the ſon of dean Addiſon, and was born at Milſton, near Ambreſbury, in Wiltſhire, on the 11th of May, 1672; and baptized the ſame day. Having received the firſt principles of his education, he was removed to the Charter-houſe, in London, where he contracted a friendſhip for Mr. Richard Steele, afterwards Sir Richard, which laſted during their lives. At fifteen he was entered in Queen's College, Oxford, where he ſoon became a maſter of the claſſics. He was twenty years of age before he publiſhed any thing in Engliſh, and then his Tranſlation of Virgil's fourth Georgic, his verſes to Mr. Dryden, ſeveral other poems, and his Diſcourſe on the Georgics, procured him the applauſe of that excellent poet; and having dedicated a poem on one of king William's campaigns to the lord keeper Somers, that judicious ſtateſman not only ſeconded his deſire to travel, but procured for him from the crown an annual penſion of 300l. by which means he was enabled to make the tour of Italy; and at his return he publiſhed an account of his travels, and dedicated them to his patron. At the death of king William his penſion was ſtopped, and he remained a conſiderable time unemployed. But in the year 1704, the lord treaſurer Godolphin happened to complain to lord Halifax, that the duke of Marlborough's victory at Blenheim had not been celebrated in verſe in the manner it deſerved; and intimated, that he would take it kindly, if his lordſhip, who was the known patron of the poets, would name a gentleman capable of doing juſtice to ſo elevated a ſubject; lord Halifax replied with ſome quickneſs, that he was well acquainted with ſuch a perſon, but that he would not name him; adding, that he had long ſeen with indignation, men of no merit, maintained in pomp and luxury at the public expence, while perſons of too much modeſty, with great abilities, languiſhed in obſcurity. The treaſurer ſaid he would pawn his honour, whoever his lordſhip ſhould name, might venture upon this theme without fear of loſing his time. Upon this lord Halifax named Mr. Addiſon, but inſiſted

that the treaſurer himſelf ſhould ſend to him, which he promiſed. Accordingly he prevailed upon Mr. Boyle, chancellor of the exchequer, to go to Mr. Addiſon in his name, and communicate to him the buſineſs; which he accordingly did, in ſo obliging a manner, that he readily entered upon the taſk. The lord-treaſurer ſaw a part of the poem before it was finiſhed, and was ſo pleaſed with it, that he immediately made him a commiſſioner of appeals. Two years after he was appointed under-ſecretary of ſtate: after this he was made ſecretary to the lord-lieutenant of Ireland, and keeper of the records in that kingdom. He aſſiſted Sir Richard Steele in writing the Tatler, till its concluſion in 1711. And Sir Richard having ſoon after formed the plan of the Spectator, conſulted Mr. Addiſon about it, who furniſhed the greateſt part or thoſe papers which are in higheſt eſteem, which he marked with ſome letter in the word CLIO. In 1713 his Cato appeared on the ſtage, and with the applauſe of every party, ran thirty-five nights. He afterwards had a ſhare in the Guardian, &c. Upon the death of the queen the lords juſtices appointed him their ſecretary. After this, Mr. Addiſon was made one of the lords of trade. In 1716 he married the counteſs of Warwick, and was the next year appointed by king George I. one of his principal ſecretaries of ſtate: but his health, which had been before impaired by an aſthmatic diſorder, ſuffered greatly by his advancement. He therefore reſigned his office, and applied himſelf to the writing A Treatiſe on the Chriſtian Religion; but a ſevere relapſe put a period to his life on the 17th of June, 1719, in the fifty-fourth year of his age.

ADDITAMENT, ſomething added to another. Thus phyſicians call the ingredients added to a medicine already compounded, additaments.

ADDITION, in a general ſenſe, the uniting ſeveral things together, or adding one thing to another.

ADDITION, in arithmetic, is the firſt of the four fundamental rules or operations of that ſcience, and conſiſts in finding a certain number equal to two or more numbers taken together, or in finding the moſt ſimple expreſſion of a number according to the eſtabliſhed notation; the number ſo found being called their ſum.

The algebraic ſign or character of addition is +, commonly pronounced *plus*. Thus 4 + 5 ſignifies the ſum or aggregate of 4 and 5, in reading which we ſay, four *plus* five.

The addition of ſingle numbers, or thoſe conſiſting of one digit only, is very eaſy. For example, it is evident that 5 and 8, or 5 + 8, make 13.

In compound numbers, addition is performed by writing down the given numbers in vertical columns, placing units under units, tens under tens, hundreds under hundreds, &c. and then taking ſeparately the ſum of all the columns. This will be rendered very plain, by an example. Suppoſe it were required to add together the numbers 1773 and 123, ſet them down in the proper ranks under each other, in the following manner:

$$\begin{array}{rl} 1773 & \\ 123 & \\ \hline 1896 & \text{ſum, or total.} \\ \hline \end{array}$$

Begin by adding the units, ſaying, 3 and 3 make 6, which write down under the column of units; then proceeding to the column of tens, ſay 2 and 7 make 9, (tens) which are equivalent to tens, ſet down therefore 9 under the column of tens; laſtly, proceeding to the column of thouſands, where there is but one digit or figure, write it under that column, and the ſum or total of theſe numbers collected, will be 1896, as above.

So that, to perform this operation, all the units of the firſt column muſt be collected or added; and if the ſum of the units does not exceed 9, ſuch ſum muſt be written under the column of units; but if it be greater than 9, the number of tens muſt be kept in memory to be carried to the next column of tens; and in caſe there be any units over and above the tens, they muſt be ſet under the column of units; but if there be no overplus, then 0 muſt be put there, to ſignify that there are no units, and the tens only are to be carried to the next column of tens, where the ſame method is to be ſtrictly obſerved as in the foregoing; becauſe 10 units make 1 ten, 10 tens 1 hundred, 10 hundreds 1 thouſand, &c.

Thus to add together the numbers 76948 + 24630 + 1462 + 536; place them as in the former example:

$$\begin{array}{rl} 76948 & \\ 24639 & \\ 1462 & \\ 536 & \\ \hline 103576 & \text{ſum.} \\ \hline \end{array}$$

And, having drawn a line under them, ſay 6 and 2 make 8, and 8 make 16: where there are 1 ten and 6 units; write therefore 6 under the column of units, and keep in mind 1 (ten) to be carried to the column of tens, where ſay 1 (ten) and 3 make 4, and 6 make 10, and 3 make 13, and 4 make 17 (tens), equal to 1 hundred and 7 tens; wherefore, under the column of tens, write 7, and carry 1 hundred to the column of hundreds, where the operation is to be purſued, ſaying 1 (hundred carried) and 5 make 6, and 4 make 10, and 6 make 16 and 9 make 25 (hundreds), equal to 2 thouſands and 5 hundreds; wherefore place 5 under the column of hundreds, and carry 2 (thouſands) to that of thouſands, where ſay 2 (thouſands) and 1 make 3, and 4 make 7, and 6 make 13, equal to 13 thouſand; write therefore 3 under the column of thouſands, and carry 1 to the column of tens of thouſands, where ſay 1 (ten thouſand) and 2 make 3, and 7 make 10 (tens of thouſands, equal to 1 hundred thouſand); you muſt therefore write 0 under the column of tens of thouſands, to ſignify that there are none of that denomination, and place before it 1, which finiſhes the operation, and makes the ſum total 103576.

ADDITION *of different Denominations.* When the numbers are of different denominations, or when they contain, for example, pounds, ſhillings, and pence; or yards, feet and inches, care muſt be taken to place pence under pence, ſhillings under ſhillings, pounds under pounds, &c. and work as before. Suppoſe for inſtance, the following numbers were to be added, 240*l.* 14*s.* 6*d.* + 86 *l.* 10 *s.* 4 *d.* + 4 *l.* 9 *s.* 3 *d.* diſpoſe of them in the following manner;

£.	s.	d.	
240	14	6	
86	10	4	
4	9	3	
331	14	1	ſum

And, having drawn a line under, begin with the pence, ſaying 3 and 4 make 7, and 6 make 13 pence, equal to 1 ſhilling and 1 penny; write therefore 1 penny under the column of pence, and carry 1 ſhilling to the column of ſhillings, and ſay 1 and 9 make 10, and 4 make 14 ſhillings, equal to 4 ſhillings, and 1 to be carried to the tens of ſhillings, where ſay 1 and 1 make 2, and 1 make 3 (tens of ſhillings), which exceeding 1 pound by 1 ten ſhillings, ſet down 1 in the column of tens of ſhillings, and carry the ſuperfluous 2 tens of ſhillings, equal to 1 pound, to the column of units of pounds, and then add up the ſeveral numbers of pounds as has been before directed, and the ſum total will be found to be 331*l.* 14*s.* 1*d.*

ADDITION *of Decimals* is performed in the ſame manner as that of whole numbers, as may be ſeen in the following example:

475,673
126,730
32,067
1,333

635,803

See the article DECIMAL.

In the addition of vulgar fractions, when two or more fractions are to be added into one ſum, reduce all the given fractions to ſimple fractions, of one unit, and one denominator, if they are not ſo already; then the ſum of the numerators, being made a numerator to the common denominator, make the fractional ſum ſought; which may be farther reduced as the caſe admits. See FRACTIONS.

ADDITION *of Algebra*, or the addition of indeterminate quantities, deſigned by letters of the alphabet, is performed by joining the quantities with their proper ſigns, and reducing thoſe which are capable of reduction, that is, ſimilar magnitudes. See SIMILAR and ALGEBRA.

Thus a, added to the quantity b, makes $a + b$, and a joined with $-b$, makes $a - b$, $-a$ and $-b$, makes $-a - b$, $7a$ and $9a$ makes $7a + 9a = 16a$; for $7a$ and $9a$ are ſimilar magnitudes.

When algebraical magnitudes, required to be added together, are compounded of ſeveral terms, of which ſome are ſimilar; for inſtance, if the polynomial $3a^2b^3 - 5cs^4 - 4dr + 2s$, were to be added to the polynomial $-s + 4cs^4 - a^2b^3 + 4dr$, write down firſt one of theſe polynomials, juſt as it is given.

$$\begin{array}{rrrr} 3a^2b^3 & - 5cs^4 & - 4dr & + 2s \\ -a^2b^3 & + 4cs^4 & + 4dr & - s \\ \hline a^2b^3 & - cs^4 & * & + s \text{ ſum.} \end{array}$$

Then diſpoſe the other polynomial under it in ſuch a manner that the ſimilar terms may fall directly under one another; draw a line under both thus diſpoſed, and, reducing ſucceſſively the ſimilar terms to their moſt ſimple expreſſions, the ſums of the two polynomials will be found to be $2a^2b^3 - cs^4 + s$, placing an aſteriſk or 0 under ſuch terms as totally deſtroy each other.

Note, ſuch quantities are called ſimilar, in algebra, as have the ſame letters, and preciſely the ſame number of letters; ſo $5abd$ and $2abd$ are ſimilar magnitudes, the former ſignifying that the magnitude abd is taken 5 times, and the ſecond that it is taken 2 times, in the whole; therefore it is taken 7 times, and therefore ſhould be written $7abd$, inſtead of $5abd + 2abd$; and as the expreſſion $7abd$ is more ſimple than $5abd + 2abd$, it is ſaid in this caſe to be reduced to the moſt ſimple expreſſion.

In order to diſcern ſimilar algebraic magnitudes readily, there is no need of giving attention to their coefficient; but the letters ſhould be written in alphabetical order. Notwithſtanding $2bad$, be the ſame thing as $2abd$ or $2dba$, yet care ſhould be taken not to invert the order of the alphabet; we ſhould not write $2abd$ inſtead of $2bad$, or of $2bda$. This ſerves to make the computation the clearer, $5abd$ and $2abd$ appear more like ſimilar magnitudes than $5bad$ and $2bda$, which yet are the ſame as the former. The quantities $3b^2c$ and $4b^2c$, are likewiſe ſimilar magnitudes; but the magnitudes $4a^3f$ and $2a^3$ are not ſimilar, though they have the common quantity a^3, it being eſſential to ſimilar magnitudes, to have the ſame letters and the ſame number of letters.

Obſerve farther, that poſitive quantities, or thoſe affected with the ſign +, are directly oppoſite to negative quantities, or thoſe preceded by the ſign of —: thus when the quantities propoſed to be added are ſimilar and affected with contrary ſigns, they wholly or partly deſtroy one another; that is, in caſe one be greater than the other, there is deſtroyed in the greateſt a part equal to the leaſt, and what remains is the difference between the greateſt and the leaſt, affected with the ſign of the greateſt.

Now as this operation, or reduction, falls always upon the coefficients: it is manifeſt that $5df$ and $-3df$, are reducible to $+2df$, ſince $+5df$ ſhews that the quantity df is taken 5 times, and $-3df$ alſo ſhews that the ſame quantity df is 3 times retracted: but the ſame quantity taken 5 times, and ſubducted 3 times, is the ſame as if taken but twice.

In like manner $+5fm$ and, $-6fm$, will be reduced to $1fm$, or ſimply to fm; for $-6fm$ is the quantity fm 6 times ſubducted, and $+5fm$ is the ſame quantity taken 5 times; the remaining quantity fm muſt therefore be negative, and conſequently muſt be $-fm$. See NEGATIVE.

ADDITION *of Irrationals*, or *ſurds*. In theſe operations it muſt be obſerved, that if the ſurds are not of the ſame denomination, they muſt be made to be ſo: in which caſe, if they are commenſurable to each other, add the rational quantities without connecting them by any ſign; and to the ſum put the radical ſign.

ADDITION *of Logarithms*. See the article LOGARITHMS.

ADDITION *of Ratios*, is the ſame with compoſition of ratios. See RATIO.

ADDITIONS, among diſtillers, all ſuch things as are added to the waſh or liquor, while fermenting, to increaſe the quantity and vinoſity of the ſpirit, or to give it a particular flavour. See DISTILLATION.

ADDITIONS, in law, the titles given to a man beſides his chriſtian and ſurname, implying his eſtate, degree, myſtery, trade, place of abode, &c. Theſe additions were ordained to prevent one man's being moleſted inſtead of another, and that each individual might be certainly known, and bear his own burden. Additions, in heraldry, ſignify ſome things added to a coat of arms as marks of honour.

ADDITIONAL, in a general ſenſe, implies ſomething added to the uſual ſum or quantity.

ADDITIONAL *Duties*, in commerce, ſignify thoſe duties which are charged upon certain commodities, over and above what they uſed to pay formerly.

ADDITIVE, ſomething to be added. Thus we ſay additive quantities, ratios, equations, &c.

ADDRESS, in a general ſenſe, implies the conducting any affair with ſkill, dexterity, and propriety.

ADDRESS, in a particular acceptation, a congratulation, petition, requeſt, or remonſtrance, preſented to the king in the name of ſome conſiderable body of men.

ADDRESS, in commerce, is the direction on the back of a letter or packet, ſent by the poſt or ſome meſſenger.

ADDUCTION, in anatomy, the action of the adductors, or adducent muſcles.

ADDUCTORS, or ADDUCENT *Muſcles*, in anatomy, a general name for ſuch muſcles as ſerve to draw one part of the body towards another; and conſequently are antagoniſts to the abductors.

The word is formed from *ad*, to, and *duco*, to lead, or draw.

ADDUCTOR *Indicis*, a muſcle of the index, or forefinger, ariſing from the internal part of the firſt bone of the thumb, and terminating in the firſt bone of the fore-finger, which it draws towards the thumb.

ADDUCTOR *Oculi*, a muſcle of the eye, which, by its action, draws the pupil towards the noſe. It is alſo called Bibitorius, becauſe it directs the eye towards the cup in drinking.

ADDUCTOR *Pollicis*, a muſcle of the thumb which riſes tendinous in common with the adductor indicis, and aſcends obliquely towards a broad termination at the ſuperior part of the firſt bone in the thumb: its uſe is to bring the thumb near the fore-finger.

ADDUCTOR *Pollicis Pedis*, a muſcle of the great toe. It ariſes from the inferior part of the os cuneiforme tertium, and is inſerted into the internal part of the oſſa ſeſamoideia of the great toe, which it draws nearer the reſt.

ADELLA, or ADENA, the Italian name of a fiſh, thought to be peculiar to the river Po, in Italy. It ſometimes increaſes to the weight of one thouſand pounds, and is taken with a very large hook faſtened to the end of a chain; and they are obliged to draw it out of the water with a yoke of oxen. It differs from a ſturgeon, both in being a river-fiſh, and in its bulk. When it arrives at a certain ſize, it looſes the barbs it had before, like thoſe of a ſturgeon. The fleſh of a ſturgeon is firm, and of a pleaſant taſte; but that of this fiſh is ſoft, and not ſo agreeable.

ADEMTION, in the civil law, the revocation of a grant, or donation.

ADENANTHERA, in botany, a genus of plants, whoſe flower is of a campanulated form, and conſiſts of five leaves. It is one of the decandria-claſs of Linnæus; with a long compreſſed pod, containing ſeveral round ſeeds.

ADENOGRAPHY, a deſcription of the glands.

ADENOIDES, glandulous, or of a glandular form, an epithet applied to the proſtatæ. See PROSTATÆ.

ADENOSUS *Abſceſſus*, in ſurgery, a hard crude tumour, reſembling a gland, and very difficult to be reſolved.

ADEPS, in anatomy, the hard fat, or ſuet, found in the abdomen, and diſtinguiſhed from pinguedo; but moſt writers uſe the two terms indifferently.

ADEPTS, a name given to thoſe alchemiſts who pretend to have diſcovered the philoſophers ſtone, and the univerſal remedy.

The word is formed from the Latin, *adipiſcor*, to obtain.

ADEQUATE, in a general ſenſe, implies ſomething exactly correſponding to, or expreſſive of, another.

ADEQUATE *Ideas*, thoſe ideas which perfectly repreſent all the parts or properties of another. See the article IDEA.

ADER, in natural hiſtory, the name of a very curious ſhell, of a fine ſky-blue colour, with yellow rays one over another towards the bottom. It is very ſmall, being never above a quarter of an inch in length, and three twelfths of an inch broad. It is pointed at the top, and has ſlight folds near the hinge, where there is alſo a ſmall cavity.

ADFECTED *Equations*, in algebra, an equation wherein the unknown quantity is found in two or more different powers. See EQUATION.

ADHATIDA, in botany, a genus of plants, the flower of which conſiſts of a ſingle leaf divided into two lips, of which the upward is bent backwards, and the lower again divided into three ſegments. The piſtil, which is fixed into the lower part of the flower, in the manner of a nail, becomes a fruit or capſule, flat and divided into two cells, containing ſeveral ſmall compreſſed ſeeds.

ADHESION, in a general ſenſe, the ſticking or adhering of two bodies together, either by their own proper action, or the compreſſion of ſome external fluid.

The word is compounded of *ad* to, and *hæreo*, to cleave.

Anatomiſts find in diſſections, adheſions of the lungs to the ſides of the thorax, pleura, or diaphragm; or of the heart to its pericardium, &c.

ADHESION, in philoſophy. See ATTRACTION *of Coheſion*.

ADHESION, among logicians, is the maintaining ſome tenet, merely on account of its ſuppoſed advantage, without conſidering whether it be ſupported by any poſitive evidence.

ADJACENT, an epithet given to ſuch things as adjoin to or are ſituated near each other.

The word is compounded of *ad*, to, and *jaceo*, to be ſituate.

ADIANTHUM, maidenhair, in the materia medica, an evergreen plant, with ſlender, ſmooth, ſhining, blackiſh ſtalks; producing no manifeſt flower. The ſeeds are a fine duſt, lying in roundiſh ſpecks about the edges of the backs of the leaves which curl over and cover them. There are two ſpecies of this plant diſtinguiſhed in the following manner:

ADIANTHUM *Verum*, or *Capillus Veneris*, true maidenhair. A plant about half a foot high, with ſeveral pinnæ of little roundiſh ſinuated or nearly triangular leaves towards the tops of the ſtalks.

ADIANTHUM *Canadenſe*, Canada maidenhair; ſomewhat larger, with ſpreading branches.

The firſt ſort grows wild in Italy, and the ſouthern parts of France, from whence the dry leaves are ſometimes brought to us. The ſecond, a native of America, is cultivated in ſome of our gardens.

The leaves of both have a ſlight ſweetiſh, roughiſh taſte, and a pleaſant, but weak ſmell, very perceptible when boiling water is poured on them. They readily give out to the water the whole of their ſmell, taſte, and medicinal virtue: the infuſions are not ungrateful; particularly that of the Canada ſort, whoſe flavour is pleaſanter and ſtronger than that of the other. Infuſions or decoctions of them, yield a moderately rough, bitteriſh, mucilaginous extract. Rectified ſpirit of wine extracts their taſte and flavour, and gains from them a deep green colour, but diſſolves little of the mucilaginous ſubſtance, in which a conſiderable part of their virtue conſiſts: the extract obtained by inſpiſating the tincture, is leſs in quantity, and ſtronger in taſte, than that made with water. Maidenhair has been long eſteemed againſt diſorders of the breaſt; for promoting expectoration, ſoftening recent coughs, and allaying the tickling in the throat occaſioned by defluctions of rheum. For theſe purpoſes, a ſyrup of the true ſort, flavoured with orange-flower water, has been uſually brought from France; and a ſyrup of the Canada ſort, made with maple ſugar, is ſometimes received from America. The virtue of the maidenhair is obtainable, however, to much better advantage, by drinking an infuſion of the herb as tea, ſweetened either with ſugar, or by the addition of a little liquorice. The Engliſh maidenhair has been commonly ſubſtituted in the pectoral ſyrups and infuſions made among us: the Canada ſpecies, which appears to be ſuperior to both, is ſaid to have been long made uſe of in France, and has lately been introduced into practice in this country. *Lewis's Hiſtory of the Materia Medica.*

ADJECTIVE, in grammar, a word expreſſive of ſome quality belonging to the ſubſtantive.

But as every quality ſuppoſes a ſubſtance, of which it is the quality; it follows, that every adjective ſuppoſes a ſubſtantive. If we ſay the *fine* touches you; the *true* ought to be the ſubject of our enquiries; the *good* is preferable to the *handſome*; the *rich* relieve you, &c. it is evident that we conſider theſe qualities ſo far only as they are attached to ſome ſubſtance or agent: the *fine*, that is, the ſubſtance which is fine; the *true*, or that which is true, &c. In theſe examples, the *fine*, the *true*, *&c.* are not merely adjectives: they are adjectives uſed ſubſtantively; they denote any agent whatſoever, provided that agent be fine, true, good, &c. It therefore follows, that theſe words are both adjectives and ſubſtantives at the ſame time; they are ſubſtantives becauſe they denote an agent; they are adjectives, becauſe they aſſign a certain qualification to the agent.

There are as many ſpecies of adjectives as there are ſpecies of qualities, manners, and relations.

We do not know the eſſence of the ſubſtances themſelves, we know them only by the impreſſions they make upon our ſenſes; and therefore we give the object ſuch and ſuch qualities as are proper to the ſenſe thoſe impreſſions affect: if the eyes are affected, we ſay that the object is coloured; that it is either white, black, red, blue, &c. If it affects the taſte, we denominate it either ſweet, bitter, ſour, unſavoury, &c. If it regards the ſenſe of feeling, the object is either rough, ſmooth, hard, ſoft, fat, oily, dry, &c. &c. Conſequently the words white, black, red, blue, ſweet, bitter, ſour, unſavory, &c. are ſo many qualifications given to objects, and therefore ſo many adjectives; and becauſe theſe impreſſions are cauſed by the action of phyſical objects upon our ſenſes, we may properly call theſe words by the name of phyſical adjectives. It will however be neceſſary to obſerve, that there is nothing in the object ſimilar to the ſentiment they excite in us; all we can infer from hence is, that ſuch objects have the property of exciting in us ſuch a ſenſation, or ſuch a ſentiment, according to the diſpoſition of our organs, and the laws of univerſal mechaniſm. A needle, for inſtance, is ſuch an object, that if the point of it be forced into the ſkin, the party will feel a ſenſation of pain; but this ſenſation will be peculiar to the perſon affected, and not at all to the needle; we may ſay the ſame of every other ſenſation. There are alſo metaphyſical adjectives, which are equally numerous, and from which we might form as many different claſſes as there are kinds of contemplations under which the mind may conſider phyſical and metaphyſical objects. As we are accuſtomed to qualify phyſical beings, in conſequence of the immediate impreſſions they make upon us; ſo that we alſo qualify metaphyſical and abſtract beings in conſequence of ſome conſiderations of our mental faculty, with reſpect to theſe beings. The adjectives that expreſs theſe ſpecies of contemplations are what we call metaphyſical adjectives. Perhaps the following examples will better explain what we mean by metaphyſical adjectives. Suppoſe a row of trees in the midſt of a vaſt plain, and that two perſons are juſt entered this row, one at the one end, and the other at the other; each of theſe, obſerving the trees of this row, ſays, this is the firſt; ſo that the tree which each perſon calls the firſt, is the laſt with regard to the other. Thus firſt and laſt, together with the other nouns of ordinal number, are nothing more than metaphyſical adjectives; or more properly adjectives of relation and numeral affinity. The nouns of cardinal numbers, ſuch as two, three, four, &c. are alſo metaphyſical adjectives, becauſe they ſerve to qualify a collection of individuals. Great and little are alſo metaphyſical adjectives; for any object is neither great nor little conſidered in itſelf; it acquires thoſe appellations only from its relation to ſome other object: that to which we have given the name of great, has cauſed in our mind a different impreſſion from what we call little; it is the perception of this difference which occaſions us to invent the names of great, little, leſs, &c. Different, ſimilar, alike, are likewiſe metaphyſical adjectives, which qualify the ſubſtantives in conſequence of certain particular contemplations of the mind. The word different, for inſtance, qualifies a noun, when we feel it has not made impreſſions in our mind ſimilar to thoſe of another. Where two objects are ſo formed that we perceive they are diſtinct, though in ſome particulars they make ſimilar impreſſions on our mind, we ſay that they are ſimilar in theſe particulars, becauſe in that reſpect we find ourſelves affected in the ſame manner: ſimilar therefore is a metaphyſical adjective. If we walk round a fortified city, we ſhall perceive that it is incloſed within its bulwarks; we obſerve a country bounded on the one ſide by a river, on the other by a foreſt; we ſee a picture incloſed in its frame, the extent whereof we can even meaſure, and the limits of which we plainly perceive: we place a book or a guinea upon a table, and obſerve that they occupy only a ſmall extent upon it; that the table fills but a ſmall ſpace of the chamber, and that the chamber itſelf is ſurrounded with walls: in ſhort, all bodies appear to be bounded by others, beyond which there is ſtill ſpace; theſe bodies therefore are bounded, terminated, and ended: thus bounded, terminated, and ended, are nothing more than metaphyſical adjectives; becauſe they imply only the bounds and knowledge of a further extenſion. On the other hand, ſhould we apply ourſelves to reckon any number whatſoever, whether it be of the ſands on the ſea ſhore, or of the leaves of all the trees growing upon the face of the earth, we ſhall perceive that this number can be increaſed, till at laſt, tired with innumerable additions, which are always poſſible, we ſay, that this number is infinite, or ſuch that we cannot perceive its limits, becauſe we can always increaſe the ſum total. The ſame may be ſaid of all extended bodies, the boundaries of which our imaginations can always remove, at laſt, to infinite extenſion; the term infinite, therefore, is a metaphyſical adjective. Perfect is again another metaphyſical adjective: cuſtom ſhews us, that there are beings that have advantages of which others are deſtitute: we find that the former are therefore in that reſpect of more value than the latter: plants, flowers, and trees, are worth more than common ſtones; animals have qualities ſtill more preferable to thoſe of plants: and man has knowledge which raiſes him above animals. If we examine attentively two pictures of the ſame perſon, one whereof recalls to our mind, in a very forcible manner, the image of that perſon, while the other excites only a faint idea, we ſay, that the picture ſpeaks, or that it is perfect, at leaſt with reſpect to the other.

AD INQUIRENDUM, in law, a writ commanding enquiry to be made about ſomething connected with a cauſe depending in the king's courts.

ADJOURNMENT, the putting off a court, or other meeting, till another day.

There is a difference between the adjournment and the prorogation of the parliament; the former not only being for a ſhorter time, but alſo done by the houſe itſelf; whereas the latter is an act of royal authority.

ADIPOSE, an epithet applied by phyſicians, anatomiſts, &c. to ſeveral cells, ducts, &c. belonging to the fat of bodies.

ADIPOSE *Membrane, Adipoſa Membrana,* in anatomy, a particular membrane, inveſting the human body immediately under the ſkin, and ſuppoſed to be the baſis of the fat which is depoſited in its cells. This is not a ſingle membrane, but a congeries of a great number of membranous laminæ, joined irregularly to each other at different diſtances, ſo as to form numerous interſtices of different capacities communicating with one another.

ADIT *of a Mine*, the paſſage, or opening, through which the miners paſs into the mine.

The word is Latin, *aditus*, ſignifying a way or paſſage.

ADJUDICATION, in law, the act of adjudging, decreeing, or determining a cauſe.

The word is compounded of *ad*, to, and *judico*, to give ſentence.

ADJUNCT, among philoſophers, ſignifies ſomething added to another, without being any neceſſary part of it.

ADJUNCT, in metaphyſics, ſome quality belonging to either the body or mind, whether natural or acquired.

ADJUNCT, in rhetoric and grammar, an epithet, or adjective, added to enlarge and augment the energy of a diſcourſe.

AD JURIS REGIS, in law, is a writ which lies for a clerk preſented to a living by the king.

ADJUTAGE, in hydraulics. See AJUTAGE.

ADJUTANT, a military officer whoſe buſineſs is to aſſiſt the major, and thence often called the aid-major.

ADJUTORIUM, in anatomy the bone of the arm, generally called the humerus. See HUMERUS.

ADMEASUREMENT, in law, is a writ for the adjuſting the ſhares of ſomething to be divided.

ADMINICLE, *adminiculum latin*, a term uſed in our old law books, to imply any aid, help, aſſiſtance, or ſupport. Antiquarians call the attributes of Juno, repreſented on medals, by the name of adminicles.

ADMINISTRATION, in a general ſenſe, the direction of government, or direction of affairs.

ADMINISTRATION, in law, ſignifies the office of an adminiſtrator.

ADMINISTRATOR, in law, the perſon to whom the goods, effects, or eſtate of a teſtator are intruſted, and for which he is accountable when required. The biſhop of the dioceſe, where the party dies, is regularly to grant adminiſtration; but if the inteſtate had goods in ſeveral dioceſes, adminiſtration muſt be granted by the archbiſhop in the prerogative court.

ADMINISTRATRIX, a woman who acts as adminiſtrator.

ADMIRAL, a great officer, or magiſtrate, who has the government of a navy, and the hearing of all maritime cauſes.

It is probable that both the name and dignity were derived from the Saracens, and, by reaſon of the holy wars, brought amongſt us; for admiral, in the Arabian language, ſignifies a prince, or chief ruler, and was the ordinary title of the governors of cities, provinces, &c. and that therefore they called the commander of the navy, by that name, as a name of dignity and honour. And, indeed, there are no inſtances of admirals in this part of Europe before the year 1284, when Philip of France, who had attended St. Lewis in the wars againſt the Saracens, created an admiral. Du Cange aſſerts, that the Sicilians were the firſt, and the Genoeſe the next, who gave the denomination of admiral to the commanders of their naval armaments, and that they took it from the Saracen or Arabic Emir, a general name for every commanding officer. As for the exact time when the word was introduced among us, it is uncertain; but in the fifty-ſixth year of the reign of Henry III. not only the hiſtorians, but the charter themſelves, very frequently uſe the word admiral.

Formerly there were generally three or four admirals appointed in the Engliſh ſeas, all of them holding the office *durante bene placito*; and each of them having particular limits under their charge and government; as admirals of the fleet of ſhips, from the mouth of the Thames, northward, ſouthward, or weſtward. There were alſo admirals of the Cinque ports, as in the reign of Edward III. when one William Latimer was ſtiled, *admiralis quinque portuum*; and we ſometimes find that one perſon has been admiral of the fleets to the ſouthward, northward, and weſtward: but the title of *admiralis Angliæ* was not frequent till the reign of Henry IV. when the king's brother had that title given him, which in all commiſſions afterwards was granted to the ſucceeding admirals. It may be obſerved, that there was a title above that of admiral of England, which was, the king's lieutenant-general of the ſea; this title is mentioned in the reign of Richard II.

Before the uſe of the word admiral was known, the title of *cuſtodes maris*, i. e. *wardens of the ſea*, was made uſe of.

Lord high ADMIRAL *of England*, in ſome ancient records called *capitanus maritimorum*, i. e. *ſuperintendant of Marine*, an officer of great antiquity and truſt, as appears by the laws of Oleron, ſo denominated from the place they were made at by

Richard I. The firſt title of admiral of England, expreſsly conferred upon a ſubject, was given by patent of Richard II. to Richard Fitz-allen, jun. earl of Arundel and Surry: for thoſe who before enjoyed this office were ſimply termed admirals, though their juriſdiction ſeems at large, eſpecially in the reign of Edward III. when the court of admiralty was firſt erected. This officer has the management of all maritime affairs, and the government of the royal navy, with power of deciſion in all maritime caſes, both civil and criminal: he judges of all things done upon the ſea, in any part of the world; upon the ſea-coaſts, in all ports and havens, and upon all rivers below the firſt bridge from the ſea. By him, vice-admirals, rear-admirals, and all ſea-captains are commiſſioned; all deputies for particular coaſts, and coroners to view dead bodies found on the ſea-coaſts, or at ſea: he alſo appoints the judges for his court of admiralty, and may impriſon, releaſe, &c. All ports and havens are *infra corpus comitatus*, and the admiral hath no juriſdiction of any thing done in them. Between high and low water-mark, the common law and the high admiral have juriſdiction by turns, one upon the water, and the other upon the land. The admiral hath power to arreſt ſhips in great ſtreams, and during the ſame voyages, every commanding officer and ſoldier of ſhips of war, ſhall obſerve the commands of the admiral, &c. on pain of death, or other puniſhment. The lord high-admiral has power, not only over the ſeamen ſerving in his ſhips of war, but over all other ſeamen, to arreſt them for the ſervice of the ſtate; and, if any of them run away, without leave of the admiral, he hath power to make a record thereof, and certify the ſame to the ſheriffs, mayors, bailiffs, &c. who ſhall cauſe them to be apprehended and impriſoned.

This is ſo great an office, in point of truſt, honour, and profit, that it has uſually been given to princes of the blood, or the moſt eminent perſons among the nobility. We have had no high-admiral for many years, the office being put in commiſſion, or under the adminiſtration of the lords commiſſioners of the admiralty, who by ſtatute have the ſame power and authority as the lord high-admiral.

ADMIRAL, alſo ſignifies the commander in chief of any ſingle fleet, or ſquadron, or, in general, any flag officer whatever. The commander of a fleet carries his flag at the main-top-maſt head.

Vice ADMIRAL, the commander of the ſecond ſquadron, and carries his flag at the fore-top-maſt head.

Rear ADMIRAL, the commander of the third ſquadron, and carries his flag at the mizzen-top-maſt head.

Vice ADMIRAL is alſo an officer appointed by the lords commiſſioners of the admiralty. There are ſeveral of theſe officers eſtabliſhed in different parts of Great Britain, with judges and marſhals under them, for executing juriſdiction within their reſpective limits. Their decrees however are not final, an appeal lying to the court of admiralty in London.

ADMIRAL, in natural hiſtory, the name of a beautiful ſhell of the voluta kind, greatly admired by the curious. There are four ſpecies of this ſhell called grand-admiral, vice-admiral, orange-admiral, and extra-admiral. The firſt is extremely beautiful, of an elegant white enamel, variegated with bands of yellow, which, in ſome meaſure, repreſent the colours of the flags in ſhips of war. It is of a very curious ſhape, and finely turned about the head; but its diſtinguiſhing character is a denticulated line running along the center of the large yellow band; and this diſtinguiſhes it from the vice-admiral, though the head of the latter is alſo leſs elegantly formed. See plate I. *fig.* 4. where A is the admiral, and B the vice-admiral. The orange-admiral has more yellow than any of the others, and the bands of the extra-admiral run into one another.

ADMIRALTY, the office of lord high-admiral, whether diſcharged by one ſingle perſon, or by joint commiſſioners, called lords of the admiralty.

Court of ADMIRALTY, a ſovereign court, held by the lord high-admiral, or lords of the admiralty, where cognizance is taken in all maritime affairs. All crimes committed on the high-ſeas, or on great rivers below the firſt bridge next the ſea, are cognizable in this court only, and before which they muſt be tried by judge and jury. But in civil caſes the mode is different, the deciſions being all made according to the civil law.

ADMIRATION, in grammar, a mark or character importing ſomething wonderful, or worthy of admiration. It is marked thus (!).

ADMISSION, among eccleſiaſtical writers, the act of a biſhop's admitting, or allowing a clerk to be able, or properly qualified, for ſerving a cure.

ADNATA, of *ad*, and *nato*, in natural hiſtory, a general name for whatever things grow on animal or vegetable bodies, whether they are inſeparable, as hair, horns, &c. or only aſcititious, as the various epiſitical plants.

ADNATA *Tunica*, in anatomy, one of the tunics or coats of the eye, otherwiſe called conjunctiva and albuginea. It is the ſame part with that termed the white of the eye, and formed by the tendinous expanſions of the muſcles which move that organ. See the article EYE.

ADNATA, or ADNASCENTA, among gardeners, ſignify thoſe off-ſets, which proceed, by a new germination under the earth, from the lilly, narciſſus, hyacinth, and other flowers, and afterwards grow to the roots.

ADNOUN, a term uſed by ſome grammarians to denote the adjective. See the article ADJECTIVE.

ADONAI, one of the names of God, uſed by the ſacred writers.

The word is in the plural number, and properly ſignifies *my lords*.

ADONIA, in antiquity, were feſtivals celebrated in honour of Venus, and in memory of the beloved Adonis. See ADONIS.

ADONIAS, a name given by the ancient botaniſts to the anemony, from an idle ſuppoſition of its having owed its origin to the tears ſhed by Venus, in lamenting the death of her favourite Adonis. See ANEMONY.

ADONIC, a ſort of verſe uſed by the Greek and Latin poets, conſiſting of two feet, the firſt of which is a dactyle, and the ſecond a ſpondee, or trochee.

It was originally uſed in the lamentations for the death of Adonis, and from that circumſtance acquired its name. Its principal uſe among the poets, however, is only as a concluſion to the Sapphic verſe; as in the following:

Scandit æratas vitioſa naves
Cura, nec turmas equitum relinquit
Ocyor cervis & agente nimbos
Ocyor euro.
HORAT.

*ADONIS, in fabulous hiſtory, a youth of incomparable beauty, he was the ſon of Cynaras by his own daughter Myrrha. The goddeſs Venus fell in love with him, and often came down to meet him on Mount Libanus. But Mars transformed himſelf into a wild boar, and as Adonis was hunting ſtruck him with one of his tuſks in the groin and killed him. Venus hearing his cries, haſted to his aſſiſtance, and in her way trod on a thorn, when the blood which trickled from her foot produced the damaſk roſe; but coming too late to ſave him, ſhe changed him into the flower anemone, which ſtill retains a crimſon colour. After this ſhe went to hell, and prevailed on Proſerpine to ſuffer Adonis to be ſix months with her in heaven, and continue the other ſix months in the infernal regions.

ADONIS, in zoology, a ſmall fiſh of a cylindrical ſhape, and about ſix inches long, ſuppoſed by Mr. Ray to be the excochis.

ADONIS *Flos*, in botany, a genus of polyandrious plants, called, in Engliſh, pheaſants eye, or red maithers.

ADOPTION, an act, whereby any perſon takes another into his family, owns him for his ſon, and appoints him for his heir. The cuſtom of adoption was common among the Romans; yet it was not practiſed, but for certain cauſes expreſſed in the laws, and with certain formalities uſual in ſuch caſes: they firſt learnt it from the Greeks. This adoption was a ſort of imitation of nature, intended for the comfort of thoſe who had no children; therefore he that was to adopt was to have no children of his own, and to be paſt the age of getting any; nor were eunuchs allowed to adopt, as being under an actual impotency of begetting children; neither was it lawful for a young man to adopt an elder, becauſe that would have been contrary to the order of nature; nay, it was even required that he who adopted ſhould be at leaſt eighteen years older than his adopted ſon, that there might appear a probability of his being the natural father. Adoption is alſo applied to the paſſion of Our Saviour, and the communication of the merits of his death, which being applied to us by baptiſm, we become the *adopted* children of God, and have a part in the inheritance of heaven. This is the doctrine taught by St. Paul in ſeveral places particularly in Rom. viii. 15. Gal. iv. 45.

ADORATION, a worſhip the pagans gave their pretended deities: the poſture for this religious regard was putting their hand to their mouth, and kiſſing it. Adoration, in ſcripture, is taken not only for that veneration or worſhip due to God alone, but likewiſe for thoſe marks of outward reſpect which are paid to ſuperiors. Adoration of both kinds is generally attending with bowing the body very low, and ſometimes with proſtration, or throwing one's ſelf on the earth. The election of popes is performed two ways, by adoration, and by ſcrutiny. In election, by adoration, the cardinals ruſh haſtily, as if agitated by ſome ſpirit, to the adoration of ſome one among them, to proclaim him pope. When the election is carried by ſcrutiny, they do not adore the new pope till he is placed on the altar.

ADOSSE, in heraldry, implies two animals placed back to back.

AD QUOD DAMNUM, in law, a writ neceſſary to be iſſued before the king grants certain liberties, as a fair, market, or the like; ordering the ſheriff to enquire what damage is like to be the conſequence of ſuch a grant.

ADRACHNE, the arbutus, or ſtrawberry-tree. See ARBUTUS.

ADRAMUS, in mythology, the name of a deity peculiar to Sicily, who was worſhipped in the city of Adram, which thence obtained its name.

* ADRIAN, the only Engliſhman that ever ſat in St. Peter's chair. His name was Nicholas Brekeſpere. He was the ſon of one Robert de Camera, a man of learning, but poor, and was born at Langley, near St. Albans: his father being a lay-brother in the abbey of St. Albans, he daily received alms at their gate; but being unable to obtain admiſſion into the houſe, he went to Arles, in France, where he was firſt admitted ſervitor to the regular canons of St. Rufus, then one of that body, and at length general of the order. Pope Eugenius III. made him cardinal and biſhop of Albania, and ſent him as his legate to Denmark and Norway, where he laboured with great zeal and ſucceſs in the converſion of the people; and at his return was unanimouſly choſen pope on the 11th of December, 1154, after the death of Anaſtatius IV. Adrian died on the firſt of September, 1159.

ADRIANISTS, in eccleſiaſtical hiſtory, a ſect of heretics divided into two branches; the firſt were diſciples of Simon Magus, and flouriſhed about the year 34. Probably this ſect, and the ſix others which ſprung from the Simonians, took their name from the particular diſciples of Simon. The ſecond were the followers of Adrian Hamſtead, the anabaptiſt, and held ſome particular errors concerning Chriſt. *Bingham's Antiq.*

AD TERMINUM *Qui præteriit*, in law, a writ of entry which lies for the leſſor or his heirs, if after the expiration of a leaſe, whether it be for years or life, the leſſee, or other occupier of the land, &c. refuſes to quit the premiſes.

ADVANCED, in a general ſenſe, ſignifies ſomething placed or ſituated before another.

ADVANCED *Ditch*, in fortification, the ditch ſurrounding the glacis or eſplanade of a place.

ADVANCED *Guard*, a military term, denotes the firſt line of an army marching towards an enemy. But it is more particularly uſed to ſignify a ſmall party of horſe ſtationed before the the main guard.

ADVANCER, among ſportſmen, denotes one of the ſtarts, or branches of a buck's attire, between the back antler and the palm.

ADVENT, a feſtival in the Chriſtian church; being the four Sundays immediately preceding Chriſtmas.

It is appointed to employ the thoughts of Chriſtians on the firſt Advent, or coming of Chriſt in the fleſh, and his ſecond Advent, or coming to judge the world. The primitive Chriſtians practiſed great auſterity during this ſeaſon. At firſt they faſted three days in the week, but were afterwards obliged to faſt every day.

ADVENTITIOUS, whatever is extrinſically added to a thing. This adventitious matter is what is joined fortuitouſly to a body.

ADVENTITIOUS, among civilians, implies goods or effects acquired accidentally, or by the liberality of a ſtranger. It alſo ſignifies thoſe effects which a perſon acquires by collateral, not by direct, ſucceſſion.

AD VENTREM *Inſpiciendum*, in law, a writ commanding a woman to be ſearched, whether ſhe be with child by a former huſband, on her with-holding lands from the heir.

ADVERB, *adverbium latin*, in grammar, a word joined to a verb, adjective, &c. and ſolely applied to the uſe of qualifying and reſtraining the latitude of their ſignification.

Adverbs, though very numerous, may be reduced to certain claſſes, the principal of which are thoſe of order, of place, of time, of quantity, of quality, of manner, of affirmation, of doubting, of compariſon, and of interrogation.

ADVERSARY, an enemy, or one that oppoſes another.

ADVERSARY, in law, either of the contending parties, conſidered as oppoſing each other.

Letter of ADVICE, in commerce, implies a letter ſent by the drawer of a bill of exchange, or the remitter of goods, &c. to his correſpondent, informing him that he has drawn ſuch a bill, or ſent ſuch a quantity of merchandize, by ſuch a ſhip, or other conveyance.

ADULTERATION, in a general ſenſe, ſignifies the act of debaſing, by ſome improper mixture, ſomething that was pure and genuine.

ADULTERATION *of Coin*, is the making it of a baſer metal, or adding a greater proportion of alloy than is uſed in the genuine and ſtandard coin. All nations have conſidered this action as a capital offence. To prevent diminiſhing of coin, an act paſſed in 1773, impowering any perſon to cut in pieces any Engliſh gold coin that had been clipped, or otherwiſe diminiſhed than by common natural uſe or wear.

ADULTERATION, in pharmacy, the act of uſing ingredients of leſs virtue in a medicinal compoſition, in order to ſave expence. This pernicious practice has greatly impeded the progreſs of the healing art, and too often proved of fatal conſequence to the patient.

ADULTERY, the crime committed by married men or women, who, in violation of their marriage vow, have carnal commerce with another beſides the perſon to whom they plighted their faith The Moſaic law commanded that the man and the woman who had been guilty of adultery ſhould be put to death. The Greeks as well as Romans enacted ſevere laws againſt adulterers. Solon, the wiſe law-giver of the Lacedemonians, made it lawful to to kill the adulterer, and enacted that the woman ſhould be puniſhed, by ſtripping her of the ornaments belonging to her quality, by baniſhing her from all religious aſſemblies, and from all ſociety in general. The Thurians had an expreſs law, that adulterers ſhould be repreſented upon the ſtage, and conſequently expoſed to public infamy. Among the primitive Chriſtians adulterers were not admitted to the communion, till they had done ſeven years penance in faſting and ſackcloth, in ſevere afflictions and ſorrow. The Saxons formerly burnt the adultreſs, and erected a gibbet over her aſhes, whereon they hanged the adulteter.

Among the Danes and Saxons in England, the puniſhment for adultery and murder was the ſame, At preſent adultery is conſidered as a ſpiritual offence, and therefore the injured party can only bring his action of damages againſt the the adulterer ; while all the puniſhment the adultreſs receives is the being divorced from her huſband, and ſtripped of her dower.

ADULTERY, in the language of ſcripture, ſometimes implies idolatry, or the worſhipping of falſe gods.

ADVOCATE, among the Romans, implied a perſon ſkilled in their law, and who undertook the defence of cauſes at the bar, without fee or reward. Such perſons were long held in great eſteem; but, in proceſs of time, they became venal, and mercenary, and thereby loſt the reſpect that was formerly paid them. The word advocate is ſtill uſed in countries where the civil law obtains, to imply thoſe who plead the cauſe of clients at the bar. In Scotland there is a college of advocates, conſiſting of one hundred and eighty perſons, appointed to plead all actions before the lords of ſeſſion.

Lord ADVOCATE, is one of the officers of ſtate in Scotland, who pleads in all cauſes of the crown, or wherein the king is concerned.

ADVOCATE, in eccleſiaſtical hiſtory, a perſon whoſe function it was to defend the laws and revenues of the church and its religious communities. *Conſiſtorial* ADVOCATES are officers of the apoſtolic chamber, who plead in the conſiſtories at Rome. *Fiſcal* ADVOCATE, in Roman antiquity, was an officer of ſtate under the Roman emperors, who pleaded in all cauſes wherein the treaſury was concerned.

ADVOWSON, in law, the right of patronage, or preſentation to a vacant benefice. Avowſons are either appendant or in groſs ; the former depend upon, and paſs as appurtenances to a manor or lands; but the latter is a right of preſentation ſubſiſting by itſelf, and belonging to a perſon, without any relation to manor or lands.

ADUST, among phyſical writers, is a term applied to ſuch fluids of the human body, as are become of a hot and fiery nature.

ADY, in botany, the name of a ſpecies of palm-tree, found in the iſland of St. Thomas. The fruit reſembles a lemon both in ſize and ſhape, and contains an aromatic kernel, whence an oil is expreſſed, which is uſed inſtead of butter by the inhabitants.

ADYTUM. in antiquity, the moſt retired and ſacred part of the heathen temples, into which only prieſts were ſuffered to enter, and from whence oracles were delivered.

ADZE, a kind of crooked ax uſed by ſhipwrights, coopers, &c.

Æ, in grammar, a dipthong or double vowel, compoſed of A and E. Grammarians are not agreed with regard to the uſe of this diphthong in the Engliſh language ; ſome being for retaining it in all words where it was uſed by the ancients, and others for laying it totally aſide, and ſupplying its place with the ſingle E. Mr. Johnſon is of the latter opinion, and obſerves, that it ſeems not properly to have any place in the Engliſh alphabet.

ÆACEA, in antiquity, ſolemn feaſts and games celebrated at Ægina, in honour of Æacus, who, on account of the juſtice he diſpenſed upon earth, was feigned to have been appointed one of the judges in hell.

ÆCHMALOTARCH, in antiquity, was a title given to the principal leader, and governor of the Hebrew captives reſiding in Chaldæa, and the neighbouring country. The Æchmalotarch, whom the Jews themſelves call Reſch-galuth, i. e. Prince or Chief of the captivity, at preſent, is nothing more than the head of their religion, like the Epiſcopus Judæorum in England, the Altarch at Alexandria, and the Ethnarch at Antioch.

ÆDILE, *Ædilis*, among the ancient Romans, implied a magiſtrate, whoſe chief buſineſs conſiſted in ſuperintending edifices of all kinds, eſpecially thoſe which belonged to the public, as temples, aqueducts, bridges, &c. They had alſo the care of the high-ways, public places, weights, and meaſures. The prices of proviſions were alſo fixed by the ædiles, who alſo puniſhed lewd women, and ſuch perſons as frequented gaming houſes. They had the cuſtody of the plebiſcita, or orders of the people; inſpected all comedies, and other pieces of wit; and were obliged to exhibit magnificent games to the people at their own expence. There were originally only two ædiles, who were choſen out of the common people; but theſe in general being unable to ſupport the enormous expence attending their office, two others were created out of the patrician order: theſe took upon themſelves the charges of the games, and were called *ædiles curules*, or *majores*, as the two plebeians were ſtiled *minores*.

Julius Cæſar, in order to eaſe theſe four magiſtrates, increaſed their number to ſix, calling the two additional ones *ædiles cereales*, from their having the inſpection of all manner of grain committed to their care.

* ÆGEUS, in fabulous hiſtory, king of Athens, and the father of Theſeus. The Athenians having baſely killed the ſon of Minos, king of Crete, for carrying away the prize from them, Minos made war upon the Athenians; and being victorious, impoſed this ſevere condition on Ægeus, that he ſhould annually ſend into Crete ſeven of the nobleſt of the Athenian youths, choſen by lot, to be devoured by the Minotaur. On the fourth year of this tribute the choice fell on Theſeus. The good king, at his ſon's departure, gave orders, that as the ſhip ſailed with black ſails, it ſhould return with the ſame, in caſe he periſhed; but if he came back victorious, he ſhould change them into white. Theſeus, after having killed the Minotaur, forgot his father's inſtructions. Mean while the old king, impatiently waiting for his return, went every day to the top of a high rock, that overlooked the ocean, to ſee what ſhips appeared in view; and at laſt diſcovering his ſon's veſſel, with the ſable ſails, he threw himſelf into the ſea, which, from his name, was called the Ægean Sea. The Athenians decreed Ægeus divine honours, and ſacrificed to him as a marine deity, the adopted ſon of Neptune.

* ÆGIALEA, in fabulous hiſtory, daughter of Adraſtus, King of Argos, and wife to Diomedes. 'Tis related that Venus, out of revenge to Diomedes, who had wounded her in the arm at the ſiege of Troy, fired his wife with ſo laſcivious a paſſion, that ſhe was for ever running after the young men.

ÆGILOPS, in ſurgery, an abſceſs formed in the corner of the eye next the noſe.

As the inflammation in the ægilops tends rather to ſuppuration than reſolution, the tumour muſt be brought to maturation as ſoon as poſſible, leſt it ſhould turn to a fiſtula lachrymalis The applications proper for this purpoſe are emollient cataplaſms, or plaiſters of diachylon with the gums. But as ſoon as the matter is known to be formed, the lower part of the tumour ſhould be opened with a knife or lancet, the matter gently preſſed out, and the ulcer carefully deterged and healed in the common manner.

If the ulcer breaks ſpontaneouſly, as it often does, and the aperture be ſo ſmall that the matter cannot diſcharge itſelf, it ought immediately to be enlarged with a piece of prepared ſpunge or gentian root, or with the knife. After which it muſt be treated like other ulcers. If the bone be found to be carious, it will be proper to dreſs it with lint dipt in ſpirit of vitriol, or the eſſence of euphorbium. And over the common dreſſings, a compreſs dipt in lime-water muſt be applied till the caries is removed, and the wound fit for healing. *Heiſter's Surgery*.

* ÆGINA, in fabulous hiſtory, the daughter of Æſopus, king of Bœotia; ſhe was beloved by Jupiter, who debauched her in the ſimilitude of a lambent flame, and then carried her from Epidaurus to a deſert iſland called Œnope, to which ſhe gave her own name.

* ÆGIPAN, in mythology, a name given to the god Pan, from his being repreſented with the horns, legs, feet, &c. of a goat.

ÆGIS, in mythology, the ſhield preſented by Jupiter to Minerva, after his having covered it with the ſkin of Amalthea, the goat who ſuckled him. Minerva, after this, fixed Meduſa's head in the middle of the Ægis, by which means it obtained the power of turning into ſtone all who ſaw it.

ÆGISTHUS, in fabulous hiſtory, the ſon of Thyeſtes, by his own daughter Pelopeia, who, to conceal her ſhame, expoſed him in the woods. According to ſome, he was ſuckled by a goat, whence he was called Ægiſthus. He corrupted Clytemneſtra, the wife of Agamemnon, and having, by her aſſiſtance, killed her huſband, reigned ſeven years in Mycenæ; but both he and Clytemneſtra were ſlain by Oreſtes, the ſon of Agamemnon.

ÆGYPIUS, in fabulous hiſtory, the ſon of Antheus, who having debauched Timandra, her ſon Neophron, in return, ſeduced Bulis, Ægypius's mother; and having received intelligence where he was to meet Timandra, conveyed Bulis thither in her room. Ægypius lay with her, when fallen aſleep, his mother viewing him, knew him to be her ſon: when ſeized with ſhame and remorſe, ſhe took his ſword, and was going to make uſe of it in putting out his eyes; but was prevented by his waking. When Ægypius ſeeing his error, wiſhed the memory of this inceſt might be buried in his death: on which Jupiter turned Ægypius and Neophron into vultures, Bulis into a didapper, and Timandra into a titmouſe.

ÆGYPTIACUM, in pharmacy, the name of a detergent ointment, compoſed of verdigriſe, honey and vinegar, boiled to a proper conſiſtence, greatly uſed by ſurgeons in cleanſing old and foul ulcers. Dr. Quincy is of opinion, that it owes its name to the colour of the compoſition, which is a duſky brown, ſomewhat reſembling that of the ſkins of the Ægyptians.

Mel **ÆGYPTIACUM**, the ſcum of the abovementioned ointment taken off while the medicine is boiling to a proper conſiſtence. It has nearly the ſame properties, and is uſed in the ſame intentions as the former.

ÆLURUS, in mythology, a deity worſhipped by the ancient Ægyptians, under the form of a cat, or that of a man, with the head of that animal. They had likewiſe a goddeſs, whom they repreſented under the figure of a woman with the head of a cat. The Ægyptians had ſo ſuperſtitious a regard for this animal, that the killing it, whether by accident or deſign, was puniſhed with death: and Diodorus relates, that in the time of extreme famine, they choſe rather to eat one another, than touch theſe ſacred animals.

ÆNEAS, in fabulous hiſtory, a famous Trojan prince, ſon of Anchiſes and Venus. At the deſtruction of Troy he bore his aged father on his back, and ſaved him from the Greeks; but being too ſolicitous about his ſon and houſhold gods, loſt his wife Creuſa: getting on board a ſhip, he ſet ſail, and landed in Macedonia, in Sicily, and in Africa, where he was kindly received by queen Dido; but forſaking her he landed in Italy, where he married Lavinia the daughter of king Latinus, and defeated Turnus, to whom ſhe had been contracted. After the death of his father-in-law he was made king of the Latins, over whom he reigned three years: but joining with the Aborigines, he was ſlain in a battle againſt the Tuſcans. Virgil has rendered the name of this prince immortal, by making him the hero of his poem.

ÆNIGMA, a dark, perplexed, or puzzling queſtion, in which ſome well known object is concealed under an obſcure deſcription.

ÆNIGMATICAL, belonging to, or delivered in, the dark or perplexed manner of an ænigma.

ÆOLIC *Dialect*, among grammarians, one of the five dialects of the Greek tongue, uſed by the inhabitants of Æolia.

ÆOLIC *Verſe*, in proſody, a verſe conſiſting of an iambus, or ſpondee, then of two anapeſts, ſeparated by a long ſyllable, and laſtly of another ſyllable.

ÆOLIPILE, in hydraulics, a hollow ball of mettal, generally uſed in courſes of experimental philoſophy, in order to ſhew that it is poſſible to convert water into an elaſtic ſteam or vapour by heat.

ÆOLUS, in mythology, the god of the winds, was the ſon of Hippotas, by Menecla, the daughter of Hyllus, king of Lipara. He dwelt in the iſland Stronggyle, one of the ſeven iſlands that are called Æolian, as being under the dominion of Æolus. Others ſay, that his reſidence was in the iſland Lipara: and others at Rhegium, in Italy. But all agree in giving him an abſolute authority over the winds, which they ſay he confined in a vaſt cavern, and let looſe whenever he pleaſed.

ÆOLIAN *Harp, or Harp of* Æolus, a muſical inſtrument, ſo contrived that, being properly placed in a current of air, emitted thro' an aperture in the window of an apartment, produces admirable muſic merely by the wind playing on the ſtrings.

ÆRA, in chronology, a fixed point of time from which chronologers reckon. Æras are either Chriſtian, Jewiſh, Heathen, or Mahometan. Chriſtian æras are deduced either from the birth of Chriſt, from the emperor Diocleſian, or the beginning of the world. Chronologers differ as to the true point of time in which Chriſt was born: ſome place it two years, others four, and ſome five, before the common æra, which is that in general uſed among the Chriſtians.——For the different æras, or epochas, uſed by chronologers, ſee Epocha.

AERIAL, an epithet applied to every thing partaking of the nature of air, or that is connected with, or belong to, the air.

AEROLOGY, an account of the nature and properties of the air.

AEROMANCY, a ſpecies of divination among the ancients, performed by obſerving the air, winds, &c.

AEROMANCY, is uſed by ſome writers to ſignify the art of foretelling the various changes of the air and weather, by means of barometers, hydrometers, thermometers, &c.

ÆRUGO, in natural hiſtory, ſignifies the ruſt of copper, whether natural or artificial. The former is found about copper mines, and the latter made by corroding copper-plates with acids. See Verdigrise.

ÆS, in natural hiſtory, ſignifies copper. It is alſo uſed for money coined of that metal.

ÆS *Uſtum*, a chemical preparation of thin leaves of copper, ſulphur, and nitre, placed *ſtratum*, *ſuper ſtratum*, in a crucible, and ſet in a charcoal fire, till all the ſulphur is conſumed; after which, the copper is taken out of the crucible and reduced to powder. Some quench the leaves of copper in vinegar, and repeat the calcination. Its principal uſe is in colouring glaſs, to which is gives a beautiful tincture. The ſurgeons uſe it as a deterſive; and ſome have given it internally: but it is certainly a dangerous medicine, and ought to be avoided.

ÆSCHNA, in natural hiſtory, the name of a four-winged water-fly, with a long body, hairy near the tail.

ÆSCULAPIUS, in mythology, the god of phyſic. The poets ſay he was ſon of Apollo, by the nymph Coronis; who, afterwards favouring a Thracian youth, named Iſchys, was ſtruck through with darts by Apollo: but, he, repenting the action, opened her womb, and, taking out the child, called him Æſculapius, and committed the care of his education to Chiron.

Snake of Æsculapius, *Anguis Æſculapii*, in natural hiſtory, a harmleſs kind of a ſerpent, of an oblong ſhape, an ell in length, and of a yellowiſh colour, except on the back, where it is brown. Both jaws are armed with many very ſharp teeth, and on the neck are two ſmall eminences. Theſe are very common in Spain, Italy, and other warm countries. Seba has mentioned the following ſeven ſorts of æſculapian ſerpents: the firſt has the whole body encircled from the head to the tail, with broad brown and black ſtreaks; and the ſcales that cover the body are of an aſh colour and grey, mixed with white. The Braſil ſerpent, variegated with divers colours, is defended with ſtrong ſcales of a dull blue colour, mixed with black, and finely undulated. The head is curiouſly mottled and ſpeckled, and the tranſverſe ſcales on the belly are moſtly white. The æſculapian ſerpent of Panama in America has a bluiſh violet coloured body, and the belly is of a paler blue, with tranſverſe large white ſcales, joined cloſe together, except at the bending of the back, where they are all ſeparated. The head is covered with long broad uniform ſcales. The mouth is armed with ſharp crooked teeth; and it lives upon mice and ſmall birds. Its excrements ſmell like muſk. The argoli is an American ſerpent, of the æſculapian kind. The ſcales are rhomboidal, and of a greyiſh black, with large bay brown ſpots, ſome of which are round, and others oblong; but the belly is whitiſh, and the tail terminates in a point. Another ſpecies of argoli is of the ſame kind. Its ſcales are of a whitiſh aſh colour, diſpoſed in a beautiful manner, and more exactly than the former. The tail is blunt at the end, and the head and eyes ſhining, and fiery. The æſculapian ſerpent of Brazil is near three ells in length, with the head covered with large beautiful ſcales, and the neck ſurrounded by a narrow collar. The ſcales on the body are white, and in the ſhape of lozenges, each being marked in the middle with a ſmall black furrow. From the neck to the tail there are large red and brown ſpots, which are longiſh near the head, and ſhorter as they approach to the tail. The mouth is armed with very ſmall teeth. The æſculapian ſerpent, of the Eaſt-Indies, is very large, and the upper part of the body is covered with yellow ſcales, ſhaded with duſky brown, and ſhine remarkably. It is encircled with bay brown ſtreaks, ſome of which are narrow, others broad. The ſcales on the ſides, and under the belly, are of a yellowiſh aſh colour, the head is little, ſhort and prettily variegated with black and brown; the forehead is marked with two whitiſh ſpots, and the neck is ſurrounded with a white ring. The teeth are very ſmall, the body is round and fleſhy, and the tail blunt. *Brookes's Natural Hiſtory.*

ÆSON, in fabulous hiſtory, the king of Theſſaly, and father of Jaſon; Medea, at Jaſon's requeſt, by the help of her magical charms, reſtored the old king Æſon to youth.

ÆSOP, a Greek author, celebrated for his fables, was according to the general opinion, a Phrygian. He was born a ſlave, and carried to Athens, where he learnt moral philoſophy. At length he was ſold to Xanthus of the iſle of Samos, and afterwards to Idmon, of the ſame iſland, who had, at the ſame time, Rhodope, the famous courteſan, for his ſlave. He compoſed ingenious, uſeful, and agreeable fables, by which he obtained great reputation throughout all Greece; when Idmon, as a reward for his ſervice, his abilities, and his virtue, ſet him free. The report of Æſop's wiſdom having reached the ear of Crœſus, that prince ſent for him to his court, and, by the favours he conferred on him, engaged him to conſent to ſtay with him as long as he lived. Æſop there converſed with Solon and the other wiſe men of Greece. He travelled to Athens, when it was under the government of Piſyſtratus, and appeared among the ſeven wiſe men of Greece at the court of Periander, the tyrant of Corinth. At his return to Sardis, Crœſus ſent him to Delphos, in order to make a magnificent ſacrifice to Apollo, and to diſtribute to each of the citizens four minas of ſilver. But Æſop ſeeing that lands near Delphos, capable of being cultivated, were lying waſte, he reproved the Delphians for their lazineſs, and after the ſacrifices were performed, ſent the money that was left to Sardis. This conduct ſo enraged the Delphians, that they caſt him down from the top of a rock, under the pretence of his having ſtolen a golden cup conſecrated to Apollo. This cup they had concealed in one of his bundles. All Greece was concerned for the death of this great man, and the Athenians erected to him a magnificent ſtatue.

ÆSTUARY, in geography, implies an arm of the ſea, running a conſiderable way into the land.

ÆSTUARY, among phyſicians, implies a vapour-bath, or any other contrivance for conveying heat to the whole, or any particular part of the body.

ÆTHER, in philoſophy, a very thin elaſtic fluid, readily pervading the pores of all bodies, and expanded through every part of ſpace.

Philoſophers have always been greatly divided in their opinions, with regard to this ſubtile fluid; and ſome have even queſtioned its exiſtence. The reader, who deſires to know the ſentiments of the great Sir Iſaac Newton, on this head, may conſult his optics.

If in two large tall cylindrical veſſels of glaſs inverted, two little thermometers be ſuſpended ſo as not to touch the veſſels, and theſe veſſels, thus prepared, be carried out of a cold place into a warm one; the thermometer in vacuo will grow warm as much, and almoſt as ſoon, as the thermometer, which is not in vacuo; and, when the veſſels are carried back into the cold place, the thermometer in vacuo will grow cold almoſt as ſoon as the other thermometer. Is not the heat of the warm room conveyed through the vacuum by the vibrations of a much ſubtiler medium than air, which after the air was drawn out remained in the vacuum? And is not this medium the ſame with that medium by which light is refracted and reflected, and by whoſe vibrations light communicates heat to bodies, and is put into fits of eaſy reflection and eaſy tranſmiſſion? And do not the vibrations of this medium, in hot bodies, contribute to the intenſeneſs and duration of their heat? And do not hot bodies communicate their heat to contiguous cold ones, by the vibrations of this medium propagated from them into the cold ones? And is not this medium exceedingly more rare and ſubtile than the air, and exceedingly more elaſtic and active? And doth it not readily pervade all bodies? And is it not, by its elaſtice force, expanded through all the heavens?

Is not this medium much rarer within the denſe bodies of the ſun, ſtars, planets, and comets, than in the empty celeſtial ſpaces between them? And, in paſſing from them to great diſtances, doth it not grow denſer and denſer perpetually, and thereby cauſe the gravity of thoſe great bodies towards one another, and of their parts towards the bodies; every body endeavouring to go from the denſer parts of the medium towards the rarer? For if this medium be rarer within the ſun's body than at its ſurface, and rarer there than at the hundredth part of an inch from its body, and rarer there than at the fiftieth part of an inch from its body, and rarer there than at the orb of Saturn: I ſee no reaſon why the increaſe of denſity ſhould ſtop any where, and not rather be continued through all diſtances from the ſun to Saturn, and beyond. And though this increaſe of denſity may at great diſtances be exceeding ſlow, yet if the elaſtic force of this medium be exceeding great, it may ſuffice to impel bodies from the denſer parts of the medium towards the rarer, with all that power which we call gravity: and that the elaſtic force of this medium is exceeding great, may be gathered from the ſwiftneſs of its vibrations. Sounds move about 1140 Engliſh feet in a ſecond of a minute of time, and in ſeven or eight minutes of time, they move about 100 Engliſh miles. Light moves from the ſun to us in about ſeven or eight minutes of time, which diſtance is about 70000000 Engliſh miles, ſuppoſing the horizontal parallax of the ſun to be about 12″. And the vibrations or pulſes of this medium, that they may cauſe the alternate fits of eaſy tranſmiſſion and eaſy reflexion, muſt be ſwifter than light, and by conſequence about 700000 times ſwifter than ſounds; and therefore the elaſtic force of this medium, in proportion to its denſity, muſt be above 700000 × 700000 (that is, above 490000000000) times greater than the elaſtic force of the air is in proportion to its denſity. For the velocities of the pulſes of elaſtic mediums are, in a ſubduplicate ratio of the elaſticities and the rarities of the mediums, taken together. As attraction is ſtronger in ſmall magnets than in great ones, in proportion to their bulk; and gravity is greater in the ſurfaces of ſmall planets than in thoſe of great ones, in proportion to their bulk; and ſmall bodies are agitated much more by electric attraction than great ones; ſo the ſmallneſs of the rays of light may contribute very much to the power of the agent, by which they are refracted. And ſo, if any one ſhould ſuppoſe that æther (like our air) may contain particles which endeavour to recede from one another (for I do not know what this æther is), and that its particles are exceedingly ſmaller than thoſe of air, or even than thoſe of light, the exceeding ſmallneſs of its particles may contribute to the greatneſs of the force, by which thoſe particles may recede from one another, and thereby make that medium exceedingly more rare and elaſtic than air, and by conſequence exceedingly leſs able to reſiſt the motions of projectiles, and exceedingly more able to preſs upon groſs bodies, by endeavouring to expand itſelf.

Is not viſion performed chiefly by the vibrations of this medium, excited in the bottom of the eye by the rays of light, and propagated through the ſolid, pellucid and uniform capillamenta of the optic nerves into the place of ſenſation? And is not hearing performed by the vibrations either of this or ſome other medium, excited in the auditory nerves by the tremors of the air, and propagated through the ſolid, pellucid and uniform capillamenta of thoſe nerves into the place of ſenſation? And ſo of the other ſenſes. Is not animal motion, performed by the vibrations of this medium, excited in the brain by the power of the will, and propagated from thence through the ſolid, pellucid, and uniform capillamenta of the nerves into the muſcles, for contracting and dilating them? I ſuppoſe that the capillamenta of the nerves, are each of them ſolid and uniform, that the vibrating motion of the ætherial medium may be propagated along them from one end to the other uniformly, and without interruption; for obſtructions in the nerves create palſies. And, that they may be ſufficiently uniform, I ſuppoſe them to be pellucid when viewed ſingly, though the reflections in their cylindrical ſurfaces may make the whole nerve (compoſed of many capillamenta) appear opake and white, for opacity ariſes from reflecting ſurfaces, ſuch as may diſturb and interrupt the motions of this medium.

ÆTHER, in chemiſtry, a very remarkable fluid, lighter, more volatile, and more inflammable, than the moſt highly rectified ſpirit of wine. It quickly flies off when expoſed to the air, and ſuddenly catches fire when any flame approaches it. It burns like ſpirit of wine, without ſmoke, and conſumes entirely, without leaving the ſmalleſt appearance of a coal cinder or of aſhes. It diſſolves oils and oily matters, with great eaſe and rapidity. Theſe properties it has in common with an ardent ſpirit: but it reſembles an oil in that it is not miſcible with water; and this makes it eſſentially different from ſpirit of wine, the nature of which is to be miſcible with all aqueous liquors. Another very ſingular property of æther is its great affinity with gold, exceeding even that of aqua regis. It does not indeed diſſolve gold when in a maſs, and in its metalline form: but if a ſmall quantity of æther be added to a ſolution of gold, in aqua regis, and the whole ſhaken together, the gold ſeparates from the aqua regis, joins the æther, and remains diſſolved therein. The method of making it may be found in books of chemiſtry, particularly in a memoir delivered to the Academy of Sciences at Paris, by Mr. Hellot.

ÆTHERIAL, ſomething belonging to, or partaking of the nature of, æther.

ÆTHERIAL *Oil*, among chemiſts, a ſubtile, eſſential oil, approaching to the nature of ſpirit.

ÆTHIOPIAN *Crown*, in natural hiſtory, the name of a curious ſhell, about three inches in length, and two in breadth; of an oval ſhape. The ſurface is pretty ſmooth, and of a pale browniſh yellow. It is brought from Africa and the Eaſt-Indies. *Brookes's Natural Hiſt.*

ÆTHIOPS *Mineral*, in pharmacy, a preparation of mercury, made by rubbing in a glaſs, marble, or iron mortar, equal quantities of quick-ſilver and flowers of ſulphur, till the mercury diſappears, and the whole becomes a black powder. This is eſteemed one of the ſafeſt preparations of mercury, greatly uſed againſt foulneſſes of the ſkin, in ſcrophulous caſes, and in obſtinate venereal caſes. It has been long known as a remedy againſt worms, and is given with great ſucceſs in that complaint. Its doſe is from a ſcruple to a dram.

ÆTHIOPS *of Antimony*, a powerful medicine recommended by Dr. Cockburn. It will remove moſt chronical diſorders of the ſkin; and is of eſſential ſervice in all kind of obſtructions. Alſo in the king's evil, and moſt diſeaſes of the glands.

AETIANS, in eccleſiaſtical hiſtory, a ſect of heretics that appeared during the reign of Conſtantius, about the year 336. They had their name from one Aetius, a Syrian; who being reduced to poverty ſet up the trade of a goldſmith; but quitting that employment, applied himſelf to ſtudy, and became a very ſubtle diſputant. Beſides the opinions which the Aetians held common with the Arians, they maintained that faith, without works, was ſufficient to ſalvation; and that no ſin, however grievous, would be imputed to the faithful. Aetius likewiſe affirmed, that what God had concealed from the Apoſtles, he had revealed to him.

ÆTIOLOGY, in phyſic, is that branch of the healing art which aſſigns the cauſes of diſeaſes.

ÆTITES, the eagle ſtone, in natural hiſtory, a general name for all pebbles or ſtones of any kind, that have a looſe nucleus rattling within. The word is derived from the Greek, and ſignifieth an eagle; becauſe the ancients ſuppoſed it was found in an eagle's neſt. There are a great variety of theſe ſtones; but the moſt valued are thoſe formed from the ſeveral varieties of our pebbles. See plate 1. *fig.* 6. Many virtues have been aſcribed to the ætites by the ancients; but they are now conſidered as fabulous, and accordingly it has now no place in the materia medica.

AFFECTION, in a general ſenſe, an attribute inſeparable from its ſubject. Thus magnitude, figure, weight, weight, &c. are affections of all bodies: and love, fear, hatred, &c. are affections of the mind.

AFFECTION, among phyſicians, ſignifies the ſame as diſeaſe. Thus the hyſteric affection is the ſame with the hyſteric diſeaſe.

AFFEERERS, or AFFEERORS, in law, are perſons appointed in court-leets, courts-baron, &c. to ſettle upon oath the fines proper to be impoſed upon thoſe who have been guilty of faults puniſhable in thoſe courts.

AFFECTUOSO, or *Con* AFFECTO, in Italian muſic, ſignifies that the part to which it is added, ſhould be played in a very tender and moving manner.

AFFIANCE, in law, the mutual plighting of troth between a man and woman, to marry each other.

AFFIDAVIT, in law, an oath, in writing, ſworn before ſome magiſtrate or perſon properly authoriſed.

AFFINITY, among civilians, a relation contracted by marriage: in contradiſtinction to conſanguinity, or relation by blood.

AFFINITY, in chemiſtry, that natural impulſe or attraction which various bodies exert towards each other. We will endeavour to diſplay the nature of this univerſal affection of matter in the following propoſitions. Firſt, if one ſubſtance has any affinity or conformity with another, the two will unite together, and form one compound. Secondly, It is a general rule, that all ſimilar ſubſtances have an affinity with each other, and are conſequently diſpoſed to unite; as water with water, earth with earth, &c. Thirdly, Subſtances that unite together loſe ſome of their ſeparate properties; and the compounds reſulting from their union partake of the properties of thoſe ſubſtances, which ſerve as their principles. Fourthly, The ſimpler any ſubſtances are, the more perceptible and conſiderable are their affinities: whence it follows, that the leſs bodies are compounded, the more difficult it is to analyſe them; that is, to ſeparate from each other the principles of which they conſiſt. Fifthly, If a body conſiſt of two ſubſtances, and to this compound be preſented a third that has no affinity with one of theſe two primary ſubſtances, but has a greater affinity with the other than thoſe two ſubſtances have with each other, there will enſue a de-compoſition, and a new union; that is, the third ſubſtance will ſeparate the two compounding ſubſtances from each other, coaleſce with that which has an affinity with it, form therewith a new combination, and diſengage the other, which will be then left at liberty, and ſuch as it was before it had contracted any union. Sixthly, it ſometimes happens, that when a third ſubſtance is preſented to a body, conſiſting of two ſubſtances, no decompoſition follows; but the two compounding ſubſtances, without quitting each other, unite with the ſubſtance preſented to them, and form a combination of three principles: and this happens when that nearly third ſubſtance has an equal, or equal, affinity with each of the compounding ſubſtances. The ſame thing may alſo happen, even when the third ſubſtance hath no affinity but with one of the compounding ſubſtances only. To produce ſuch an effect, it is ſufficient that one of the two compounding ſubſtances have, to the third body, a relation equal, or nearly equal, to that which it has to the other compounding ſubſtance with which it is already combined. Thence it follows, that two ſubſtances, which, when apart from all others, are incapable of contracting any union, may be rendered capable of incorporating together, in ſome meaſure, and becoming parts of the ſame compound, by combining them with a third ſubſtance with which each of them has an equal affinity. Seventhly, A body, which of itſelf cannot decompoſe a compound conſiſting of two ſubſtances, becauſe they have a greater affinity with each other than it has with either of them, becomes nevertheleſs capable of ſeparating the two by uniting with one of them, when it is itſelf combined with another body, having a degree of affinity with that one ſufficient to compenſate its own deficiency: in that caſe there are two affinities; and thence enſues a double decompoſition and a double combination.

AFFIRMATION, in a general ſenſe, a ſolemn atteſtation of the truth of ſome fact.

AFFIRMATION, among logicians, is an act of the mind, aſſerting the truth or reality of ſomething; or a poſitive propoſition declaring certain properties or qualities to belong to the thing in queſtion.

AFFIRMATION, in law, an indulgence allowed to the people called Quakers, who, in caſes where an oath is required from others, are permitted to make a ſolemn affirmation that what they ſay is true; and if they make a falſe affirmation, they are ſubject to the penalties of perjury. But this relates only to oaths taken to the government, in law-ſuits, and on public occaſions; for Quakers are not permitted to give their teſtimony in any criminal caſe, &c.

AFFIRMATIVE, in a general ſenſe, denotes any thing that implies an affirmation.

AFFIRMATIVE *Propoſition.* See PROPOSITION.

AFFIRMATIVE *Sign,* in algebra, is marked thus +. See CHARACTER.

AFFORESTING, in our law books, ſignifies the turning lands into a foreſt.

AFFRAY, in laws, formerly ſignified the crime of affrighting, or terrifying; but at preſent denotes a fight or ſkirmiſh between two or more perſons.

AFFREIGHTMENT, a term uſed in ſome law books, for the freight or hire of a ſhip.

AFFRONTEE, in heraldry, is an appellation given to animals facing one another.

AFRICA, one of the four parts, or quarters of the world, is a vaſt peninſula, it being joined to Aſia only by the iſthmus of Suez, which ſeparates the Red Sea from the Mediterranean: the ſea ſurrounds it in all other places. It is ſeated between 10. 40. weſt, and 50. 0. eaſt longitude, and between 37. 30. of north latitude and 34. 50. ſouth. It is bounded on the north by the Mediterranean ſea, and the ſtreights of Gibraltar; on the ſouth by the Southern ocean; on the eaſt by the Indian ocean, the Arabic gulph, and the iſthmus of Suez, which ſeparates it from Aſia; and on the Weſt by the Weſtern ocean. From north to ſouth it is about four thouſand three hundred and twenty miles long, and from eaſt to weſt four thouſand one hundred and fifty broad. It is but lately, that the ſouthern parts of this country have been known; before which the ſea-coaſt, on the northern parts, only was ſuppoſed to be inhabited; for the ancients believed the torrid zone deſtitute of people. At that time, they had penetrated no farther than the deſerts of Barca, which are full of burning ſands, which made them conclude, that the country ſtill nearer the line muſt be more unfit to maintain any inhabitants: but it is now well known, that thoſe parts of Africa wich lie immediately under the line are well watered with ſprings and rivers, and produce a great quantity of fruit and grain, which ſerve to maintain a vaſt number of inhabitants. When we conſider that the year is divided into two ſeaſons, the rainy and the dry; the rainy ſeaſon may be compared to winter, and the dry ſeaſon to ſummer, but then the ſpring and autum are wanting: the winter continues ſeveral months, which, with the plentiful dews in the night, are ſufficient to render the land fruitful, and, in reality, there is a continual verdure all the year, as well as a continual ſucceſſion of bloſſoms and fruit.

Africa is divided into the following ſtates and kingdoms: I. The north diviſion, or coaſt of Barbary, containing Barca, Tripoly, Tunis, and Algiers. II. The weſtern diviſion, Morocco, Biledulgerid, and Zaara. III. The ſouth-weſt diviſion, contains Guinea, Benin, Loango, Congo, Angola, Benguela, Mataman, Monomugi, and Monomotopa. IV. The ſouth diviſion includes Caffraria, or the country of the Hottentots, and Terra de Natal. V. The ſouth-eaſt diviſion Sofala, and Zanguebar. VI. The north-eaſt diviſion includes Abex and Anian, Abyſſinia, or the Upper Ethiopia, Nubia, and Egypt. The interior part of this great continent is ſtill very little known. The principal rivers of Africa are the Niger and the Nile: the Niger, or Niger Nile, ſaid to proceed from the ſame ſource as the Nile, we are not ſo well ſatisfied about. Some affirm, that the rivers Gambia and Senegal are two branches of the Niger; and others, that they are diſtinct rivers.

Beſides the animals that we have in Europe, Africa produces others not ſo generally known, as lions, leopards, tigers, panthers, rhinoceroſes, elephants, cameleons, oſtriches, camels, dromedaries, monkeys, buffaloes, and wild aſſes: in the rivers, there are crocodiles and river horſes. The moſt uſeful of theſe are the elephant, the camel, and the dromedary. Africa has many iſlands; on the eaſt are, Madagaſcar, St. Maurice, Bourbon, and Zocotora. On the weſt the iſles of Madeira, the iſles of Cape Verd, the Canary iſlands. The iſles of Madeira are, Madeira, Porto Santo, and La Deſerta. The Cape de Verd iſlands are, St. Anthony, St. Vincent, St. Lucia, St. Nicholas, St. Jago, Sal, Mayo, Del Fuego, Brava, and Bonaviſta. The Canary iſlands are, Lancerota, Forteventura, Canaria, Teneriſ, Gomera, Ferro, and Palma. There are other iſlands between this continent and South America, which are reckoned among the African iſlands, St. Thomas, St. Matthew, St. Helena, Annobon, and Prince's Iſle.

AFRICA is repreſented, in deſign, by a black woman almoſt naked, with frizzled, woolly hair, an elephant's trunk for a creſt, a lion on one ſide, and a ſerpent on the other; decorated with other emblems relating to the produce of the country.

AFT, a naval term, the ſame with abaft. See ABAFT.

AFTER-BIRTH, in midwifery, the membranes which ſurround the infant in the womb, generally called the ſecundines. See DELIVERY.

AFTER-MATH, in huſbandry, the graſs which ſprings up after mowing; or the graſs cut after the corn.

AFTER-PAINS, in midwifery, exceſſive pains felt in the groin, loins, &c. after delivery.

AFTER-SWARMS, in the management of bees, are thoſe which leave the hive ſome time after the firſt have ſwarmed.

AGA, among the Turks, a great lord or commander. They ſometimes uſe the word agaſſi, or agaſi, inſtead of aga. Thus they call the aga, or commandant-general of the cavalry, ſpahilar agaſſi.

AGAMEMNON, in fabulous hiſtory, was the ſon of Atrius by Æropa. He was king of Argos and Mycene, and general of the Grecian army at the ſiege of Troy; he was obliged to ſacrifice his daughter, Iphigenia, to Diana, and to reſtore Briſeis to Achilles, from whom he had taken her away. He was aſſaſſinated by Ægiſtus, about 1183 years before Chriſt, as he was entering his dominions; but his death was revenged by his ſon Oreſtes.

AGANIPPIDES, an appellation given to the Muſes from a fountain on mount Helicon called Aganippe.

AGAPE, in eccleſiaſtical hiſtory, the love-feaſts, or feaſts of charity, uſed among the primitive Chriſtians, when a liberal contribution was made by the rich to feed the poor. The word is Greek and ſignifies love. St. Chryſoſtom gives the following account of this feaſt. The firſt Chriſtians had all things in common, as we read in the Acts of the Apoſtles: but when that equality of poſſeſſions ceaſed, as it did even in the Apoſtles time, the agape, or love-feaſt, was ſubſtituted in the room of it. Upon certain days, after partaking of the Lord's Supper, they met at a common feaſt; the rich bringing proviſions,

viſions, and the poor, who had nothing, being invited. It was always attended with receiving the Holy Sacrament; but there is ſome difference between the ancient and modern interpreters as to the circumſtance of time; viz. Whether this feaſt was held before, or after the communion. St. Chryſoſtom is of the latter opinion; the learned Dr. Cave of the former. Theſe love-feaſts, during the three firſt centuries, were held in the church: but at length ſuch abuſes were committed at them, that the councils of Laodicea and Carthage prohibited that practice for the future. The modern enthuſiaſts, we know not how juſt, are accuſed of being amorous at their love-feaſts, and that they are more carnally than ſpiritually minded.

AGARIC, in natural hiſtory, a ſpongy, fungous ſubſtance, growing on the trunk of a tree. The tree that produces the agaric is the common larch, from which turpentine is obtained. It grows wild in Dauphiny, Savoy, on the Alps, in Auſtria, Tartary, &c. and is the only coniferous tree that ſheds its leaves in the winter: when it grows old, the fungus comes forth in ſeveral places on its trunk, and if the tree is large, on the firſt branches. The fungus is of various ſizes, ſometimes not exceeding the bigneſs of the fiſt, ſometimes as large as a man's head: it takes at leaſt a year to grow to its full ſize. There are two kinds of it, called by the ancients *mas* and *femina*. The male agaric is dark coloured, hard, heavy, and woody. The female, or officinal agaric, is covered with a hard blackiſh rind like the other; but when the cortical part is pared off, the internal ſubſtance appears quite white: by age, it changes a little yellowiſh. As agaric is an excreſcence from a very reſinous tree, it is natural for it to be rich in reſin. We find in effect that it contains three fourths of its weight in reſinous matter, and that the remaining fourth is ſlimy, mucilaginous earthy ſubſtance, ſo tenacious as ſcarce to be by any means diſſolved or divided: containing, however, treated with water, a tough gluey paſte. The purgative quality of agaric reſides in the reſin: to the glutinous matter we may attribute the dangerous conſequences, which when given in ubſtance, however corrected, it is apt to produce. No wonder that ſuch a coheſive indiſſoluble ſubſtance ſhould adhere pertinaceouſly to the ſtomach and inteſtines, and occaſion gripes and other inconveniencies.

In reducing agaric to powder, whether by the raſp or the peſtle, care muſt be taken to avoid the fine duſt that flies off, which is not only apt to occaſion violent ſneezing and inflammations of the eyes, but is likewiſe very prejudicial to the breaſt. Agaric cannot of itſelf be pulverized in a mortar, on account of its glutinous ſubſtance: the beſt way of obtaining a powder from it is, firſt to raſp, and then make it into a paſte with mucilage of gum tragacanth; when this is thoroughly dry, great part of it may be beat into fine powder, and by treating the remainder in the ſame manner, the whole will at length be got through a ſieve. It might be ſuppoſed, that as it is the mucilaginous part of agaric itſelf that prevents its pulverization, the addition of freſh mucilage would do more harm than good; but the mucilage of gum tragacanth is of a quite different nature from that of agaric, being ſoluble, harmleſs, when dry brittle, and rendering the agaric alſo pulverable. In ſome diſpenſatories, a reſinous extract is directed to be prepared from this fungus, by rectified ſpirit. *Neumann's Chemiſtry.*

Mineral AGARIC, in natural hiſtory, a light marley earth, ſo called from its reſembling, both in colour and in its ſpongy texture, the vegetable agaric. It is very rarely, if ever, uſed at preſent in medicine.

AGARICOIDES, in botony, a ſort of ſmall white fungus, with yellowiſh lamellæ, found frequently in the woods on the bark of old trees.

AGATE, in natural hiſtory, a precious ſtone reſembling the onyx, in colour; but has no zones like thoſe wherewith the onyx is decorated: inſtead of which the agate has lines or ſpots of various colours, ſo diſpoſed as to repreſent the pictures of different objects; as woods, rivers, fruits, flowers, herbs, and clouds, but not very diſtinctly. The agate differs from the jaſper in hardneſs and ſmoothneſs; for though the jaſper has the ſame colours, it is ſofter, and conſiſts of rougher particles. The white veined agate, with delineations of trees and moſſes, is moſt commonly known by the name of the Mocha ſtone. It is of a very firm, compact, and fine texture, though found in the ſhape of a flinty pebble ſtone. The ſizes are various, being ſometimes only one, and ſometimes eight inches in diameter. The veins of this ſtone are beautifully diſpoſed in different figures; but there are generally many concentric irregular circles, deſcribed from centers placed in various places. They are commonly a little whiter than the ground, though ſometimes ſo faint as ſcarcely to be ſeen. Thoſe of this kind are of the higheſt value, and contain the figures of trees, moſſes, ſea-plants, and the like. Some have imagined theſe ſtones are only petrifications; and that real moſſes and ſea-plants were included therein: but this is a miſtake; for the real objects which they repreſent were never met with in ſo diminutive a ſize as their images repreſented in theſe ſtones. Theſe figures are generally black, or of a duſky colour, and appear with great advantage from the whiteneſs of the ſtone. This kind of agate, when it is perfect, is only found in the Eaſt-Indies; but there are ſome of an inferior ſort to be met with in Germany. They are called Mocha ſtones, becauſe they have been brought from the Eaſt Indies to Mocha in Arabia, and thence tranſported into Europe. Some naturaliſts however, will not allow them to be found in the Eaſt-Indies. If this be true, they may be found near the place to which they owe their name; or be brought to Mocha from other parts of Arabia. The dull milky agate is leſs valuable than the former, though of a very firm texture. They are found in the ſhape of common flint ſtones, and are from one inch to ten in diameter. It is nearly of the colour of cream; and, when broken, has a ſmooth gloſſy ſurface. It is more opaque than the former, and yet will bear a very fine poliſh. This ſpecies is common on the ſhores of the rivers in the Eaſt-Indies; and there are ſome of leſs value met with in Germany and Bohemia. The lead-coloured agate is of a very fine, firm compact texture; though found, like the former, in the ſhape of common flint ſtones, and of as rugged a ſurface. The ground is of a pale bluiſh grey, or rather of a dove-colour; and often without variation, though it has ſometimes black and ſometimes white veins, which are generally near the centre of the ſtone. This ſpecies of agate greatly reſembles an onyx, but is certainly a diſtinct ſtone. It is very hard, and will bear a fine poliſh. It is found in the Eaſt-Indies, as well as in Germany; where they form theſe ſtones into cups and ſnuff-boxes. The fleſh-coloured agate is leſs valuable than any of the former, though its texture is pretty firm and compact; and its diameter from one to ten inches. The fleſh-colour is very faint, and almoſt whitiſh. Some of theſe ſtones have no veins at all, and others abound in veins, ſpots and clouds. The ſpots are generally very ſmall, notched at the edges. When broken in pieces, it is very ſmooth and gloſſy, though not always of the ſame tranſparency. It is found in Germany, Bohemia, and Italy; and is worked into various ſorts of veſſels, and is often made uſe of inſtead of gun flints. The blood-coloured agate is, by Boet, called the hæmachates, and excels moſt of this claſs in beauty. It is always of a deep blood-red colour, ſometimes throughout, but more frequently variegated with a pale blue and brown. The blue always ſurrounds the red, and inclines to the colour of whey; but it is in no other part of the ſtone. The brown is of the colour of horn, and generally appears in irregular veins; ſometimes in ſuch plenty as to make the ground to the ſtone, and the red with its blue edges only the variegation. This ſpecies is not very common, though found in the Eaſt-Indies, America, and ſome parts of Germany. It is chiefly uſed for the tops of ſnuff-boxes. The clouded and ſpotted fleſh-coloured agate is, by Boet, called the ſandachates, and is of a very fine cloſe texture, though ſubject to flaws and cracks when the pieces are large: for which reaſon the leſſer ſtones are moſt eſteemed. It differs from the former ſpecies in having a ſmoother ſurface; and is generally of a roundiſh or oblong ſhape, a little flatted. It has no variegations except a few exceeding ſmall ſpots, of a beautiful red, variouſly diſpoſed in differents parts of the ſtone, and in different groupes. In ſome places it is more traſparent than others; and is found in the Eaſt and Weſt Indies, as alſo in Bohemia and Sileſia, though not ſo good. It is, however, very little eſteemed at preſent. The red agate, variegated with yellow, is of the colour of red lead, has a fine pure equal texture, with a ſmooth regular ſurface, and is commonly found in the ſhape of a pebble ſtone. It is from one inch to four or five in diameter, and its ground of a paler red, decorated with one of deeper colour, diſpoſed in concentric veins from different centers; but this does not appear without cloſe examination Beſides theſe, it has irregular bright yellow ſpots, which are never interſected by the veins, but placed either within or without theſe circles; and always extremely ſhort, being never above a ſixth part of an inch in length. This ſtone is very hard, and will bear a very fine poliſh. It is found in the Eaſt Indies, though not very common. The yellow agate, named, by Boet, the cerachates, or the wax-coloured agate, has been found from one to ſeven inches in diameter, of various ſhapes and ſizes, but all in a very firm compact texture. Theſe ſtones are ſometimes of the ſame colour throughout: ſometimes mixed with irregular veins; and ſometimes of a pale and almoſt white ground, veined and ſpotted with a ſtrong yellow, exactly reſembling that of fine yellow bees-wax. They are all very hard and capable of a fine poliſh; but differ greatly in degrees of tranſparency; for ſome are as tranſparent as any of the ſpecies of agate, and others almoſt entirely opaque. Theſe ſtones are found in the Eaſt-Indies and America, as alſo in Germany, though not very good. The pale yellow agate, variegated with white, black, and green, is called by Boet, the leonina, from its likeneſs to a lion's ſkin, and by the Italians brocatella. It is more variegated than the reſt of the ſtones of this kind, and has a fine compact cloſe texture, though in very irregular ſhapes, with a rugged ſurface. It ſometimes ſeems to conſiſt of an irregular maſs, made up of the abovementioned colours; ſometimes diſtinctly clouded, and ſometimes decorated with black and green veins in the form of concentric circles round a centre. The ground is always of a pale yellow, but very differently diſpoſed; ſometimes more, ſometimes leſs. In ſome alſo, one or more of theſe colours are wanting, while others contain them all. The green reſembles that of the jaſper, and the black inclines a little to the brown. It breaks with ſome difficulty into pieces, with fine ſmooth ſurfaces, and is brought from the Eaſt- Indies; but, being very ſcarce, is not commonly known. The blackiſh veined brown agate has, when found, a pretty ſmooth ſurface, though of an irregular ſhape, and is from two to ſeven inches in diameter. The brown is very deep and finely clouded, ſpotted and veined with a colour almoſt black, while the veins are generally paler and browner than the other variegations. The veins are diſpoſed in irregular concentric circles, and the innermoſt generally broadeſt. There have ſometimes been vegetable ſubſtances found in the middle of this ſtone, ſuch as the ſlender roots of moſs, or thoſe of crow ſilk. It is capable of a very high and beautiful poliſh; and is commonly cut into ſeals, buttons, heads of canes, knife handles, and the tops of ſnuff boxes. It is frequently adorned with fictitious colours, which ſink ſo deep into the ſubſtance, that they appear like natural veins of the ſtone, and render it of great value. The greeniſh brown variegated agate ſeems to be of a middle nature, between agate and jaſper. It is a beautiful ſpecies, and found in roundiſh maſſes, with a ſmooth even ſurface, from two to ſix inches in diameter. Its texture is very firm, and the ſtone ſometimes of the ſame colour throughout, being only diſtinguiſhable from the true jaſper by its hardneſs. But it has moſt frequently a browniſh green ground, variegated with irregular concentric circles, of a red or a finer green: it is alſo found irregularly clouded and ſpotted with the ſame or other colours, as white, fleſh-colour, and yellow. It is never entirely tranſparent in thoſe that are cleareſt; and is found in different parts of the world, but not equally good; for the European are the worſt, they being more coarſe, ſoft, and opaque, than thoſe of the Eaſt or Weſt-Indies. *Brooke's Natural Hiſt.*

AGATE, the name of an inſtrument uſed by gold wire-drawers; ſo called from the agate in the middle of it, which forms it principal part.

AGE, in a general ſenſe, a certain portion, or part of duration, applied to ſome particular object. Thus we ſay, the age of the world, or the years that have elapſed ſince the creation.

AGES *of the World.* Chronologers have generally divided the age of the world into ſix principal epochas; but they are not agreed between themſelves with regard to the number of years contained in each interval. Thoſe who place the creation ſix thouſand years before the birth of Chriſt, make the interval between the creation and the deluge to conſiſt of 2262 years; from the deluge to the call of Abraham, 1198; from the call of Abraham to the inſtitution of the Paſſover, 645; from the inſtitution of the Paſſover to the beginning of the reign of Saul, 774; from Saul to the publiſhing of the decree of Cyrus, for the return of the Jews, 583; and from the decree of Cyrus to the birth of Chriſt, 538. Others who make the age of the world at the birth of Chriſt only four thouſand years, follow the chronology of the Hebrew text, and compute from the creation to the deluge, 1656 years; from the deluge to the call of Abraham, 426; from the call of Abraham to the going out of Egypt, 430; from the going out of Egypt, to the foundation of the temple, 480; from the foundation of the temple to Cyrus, 476; and from Cyrus to the birth of Chriſt, 532. Others again compute from the creation to the taking of

Troy, 2830 years; from the taking of Troy to the foundation of Rome, 420; thence to the deſtruction of Carthage by Scipio, 602; from the deſtruction of Carthage to the birth of Chriſt, 200; from the birth of Chriſt to Conſtantine, 312; and thence to the re-eſtabliſhment of the weſtern empire, 808. So that the interval, according to theſe chronologers, betwen the creation and the birth of Chriſt, is 4052 years.

The learned Mr. Jackſon, in his Chronological Antiquities, has carefully inveſtigated the different epochas, and ſhewn the reaſons on which his computations are founded. From the creation to the deluge, he ſays was, 2262 years; from the deluge to the birth of Abraham, 1072; from the birth of Abraham to the exodus, 505; from the exodus to the foundation of the temple, 579; from the foundation to the deſtruction of the temple by Nebuchadnezzar, 428; from the deſtruction of the Temple to the decree of Cyrus, 51; and from the decree of Cyrus to the birth of Chriſt, 535. So that the interval between the creation and the birth of Chriſt, conſiſts of 5432 years. Some divide the duration of the world into three periods, which they call the age of the law of nature; the age of the Jewiſh law; and the age of grace. The firſt comprehends the time between Adam and Moſes; the ſecond the time between Moſes and Chriſt; and the third the years elapſed ſince the birth of our bleſſed Saviour. The ancient hiſtorians divided the time ſince the beginning of the world into three periods, which they called ages. The firſt from the creation to the deluge which happened in Greece during the reign of Ogyges: this they ſtiled the obſcure or uncertain age; being the hiſtory of mankind, uncertain during that period. The ſecond they named the fabulous, or heroic age: it began at the Ogygian deluge, and extended to the firſt Olympiad; where, what they called, the hiſtorical age commenced.

AGE, among hiſtorians, is frequently uſed to ſignify a century.

Poetical AGES *of the World.* The poets have made four ages, which they have diſtinguiſhed by the epithets of *golden*, *ſilver*, *brazen*, and *iron*. During the *golden age*, Saturn reigned in heaven, and juſtice and innocence on earth. The earth then yielded her productions without culture, and ſtreams of milk and honey flowed in every part. The *ſilver age* commenced when men began to deviate from the paths of virtue, in conſequence of which, their lives were rendered leſs happy. The *brazen age* began when the virtue and happineſs of mankind were ſtill more diminiſhed; and this gave place to the *iron age*, which commenced when men had deviated ſtill farther from the paths of virtue and happineſs.

AGE, denotes a certain period of human life, which is generally divided into four ſtages; namely, infancy, youth, manhood and old age. The firſt extends to the fourteenth year; the ſecond to the twenty-fifth; the third to the fiftieth; and the fourth to the end of life.

AGE, in law, certain periods in human life, when perſons are enabled to do certain acts, which they are incapable of before. A youth of twelve years of age, may take the oath of allegiance; at fourteen, he may chooſe his guardian and claim his lands held in ſoccage. Twenty-one is called full age, a man or woman being then capable of acting for themſelves, and of managing their own affairs.

AGE *of a tree*, the time elapſed between its being planted and cut down. The age of a tree may be known by the ligneous circles viſible in its trunk, divided horizontally by a ſaw: for both the trunk and branches of a tree acquire annually an augmentation of a ligneous circle, or a new exterior texture of fibres.

AGE *of a Horſe*, the time elapſed ſince the animal was foaled This is eaſily diſcovered by his mouth till he is eight years old, when the marks wear out. A horſe, like many other creatures of the brute creation, has his teeth divided into three ranks; his fore teeth, which are flat and ſmooth; his tuſhes; and his back teeth, called alſo his jaw-teeth, or grinders, becauſe with theſe he grinds his provender. They are twenty-four in number, twelve above, and twelve below; ſtrong and double, with ſharp edges, till the creature grows old, when they are worn much ſmoother. The firſt that grow are his foal-teeth, which begin to appear a few months after he is foaled. They are twelve in number, ſix above and ſix below; and are eaſily diſtinguiſhed from the teeth that come up afterwards, by their ſmallneſs and whiteneſs, not unlike the fore-teeth of a man. When a colt is about two years and a half old, he caſts the four middlemoſt of his foal-teeth, viz. two above and two below; though ſome do not caſt their foal-teeth till near three years old. The new teeth are eaſily diſtinguiſhed from the foal-teeth, being much ſtronger, and almoſt twice their ſize, and are called the nippers or gatherers, being thoſe by which the creature nips off the graſs when he is feeding abroad in the fields, or, when in the houſe, gathers his hay from the rack. When a horſe has got theſe four teeth complete, he is reckoned four years old. When he is about three and a half, or in the ſpring before he is four years old, he caſts four more of his foal-teeth, viz. two above and two below, one on each ſide of the nippers, or middle teeth. When, therefore, you look in a horſe's mouth, and ſee the four middle teeth full grown, and none of the fore teeth remaining, except the corner teeth, you may conclude he is four years old about April or May: ſome, indeed, are later colts; but this makes but little difference in the mouth. The tuſhes appear about the ſame time with the laſt-mentioned teeth, ſometimes ſooner than theſe, and ſometimes not till the horſe is full four years old. They are curved like the tuſhes of other beaſts; in a young horſe they have a ſharp edge all round the top, and on both ſides, the inſide being ſomewhat grooved and flattiſh, inclined to a hollowneſs. When horſes tuſhes do not appear till ſome time after the foal-teeth are caſt, and new ones are come in their room, it is generally owing to the foal-teeth having been pulled out before their time by the breeders, or other dealers in horſes, in order to make a colt of three years old appear like one of four, that he may be the more ſaleable; for when any of the foal-teeth are pulled out, the others ſoon come in their place; but the tuſhes, having none to precede them, cannot make their appearance before their proper time, viz. when a horſe is nearly four years old. One of the ſureſt marks therefore to know a four-year old horſe, is by his tuſhes, which are then but very ſmall, and ſharp on the top and edges. When a horſe comes five, or rather the ſpring before he is five, the corner teeth begin to appear, and are at firſt but juſt equal with the gums, being filled with fleſh in the middle. The tuſhes are alſo by this time grown to a more diſtinct ſize, though not very large; they alſo continue rough and ſharp on the top and edges. But the corner teeth are now moſt to be remarked: they differ from the middle teeth in being more fleſhy on the inſide, and the gums generally look rawiſh on their firſt ſhooting out; whereas the others do not look diſcoloured. The middle teeth arrive at their full growth in leſs than three weeks; but the corner teeth grow leiſurely, and are ſeldom much above the gums till the horſe is full five: they differ alſo from the other fore-teeth, in reſembling, in ſome meaſure, a ſhell; and thence are called the ſhell-teeth; becauſe they environ the fleſh in the middle half way round, and, as they grow, the fleſh within diſappears, leaving a diſtinct hollowneſs and openneſs on the inſide. When a horſe is full five, theſe teeth are generally about the thickneſs of a crown piece above the gums. From five to five and a half, they grow about a quarter of an inch high; and when a horſe is full ſix, they will be near half an inch above the gums. The corner teeth in the upper jaw fall out before thoſe of the under; ſo that the upper corner teeth are ſeen before thoſe below: on the contrary, the tuſhes in the under jaw come out before thoſe of the upper. When a horſe is full ſix years old, the hollowneſs on the inſide begins viſibly to fill up, and that which was at firſt fleſhy, grows into a browniſh ſpot, not unlike the eye of a dried garden-bean, and continues ſo till he is ſeven, with only this difference, that the tooth is more filled up and even, and the mark or ſpot becomes faint, and of a lighter colour. At eight the mark in moſt horſes is quite worn out, though ſome retain the veſtiges of it for a long time; and thoſe who have not had a good deal of experience may ſometimes be deceived, and take a horſe of nine or ten years old for one of eight. It is only at this time, when a horſe is paſt mark, that we can eaſily err in knowing the age of a horſe; for whatever practices are uſed to make a young horſe look older than he really is, by pulling out the foal-teeth before their time, may be diſcovered by feeling along the edges where the tuſhes grow, as they may be felt in the gums before the corner teeth appear; whereas, if the corner teeth become viſible ſome months before the tuſhes riſe in the gums, there is reaſon to ſuſpect that the foal-teeth have been pulled out at three years old. It will be unneceſſary to take particular notice of the tricks uſed by dealers, in order to make a falſe mark in a horſe's mouth, by hollowing the tooth with a graver, and burning a mark with a ſmall hot iron; becauſe thoſe who are acquainted with the true marks, will eaſily diſcover the cheat by the ſize and colour of the teeth, by the roundneſs and bluntneſs of the tuſhes, by the colour of the falſe mark, which is generally blacker and more impreſſed than the true mark, and by many other viſible tokens which denote the advanced age of a horſe. *Gibſon on Horſes.*

AGE *of the Moon*, in aſtronomy, the number of days elapſed ſince the laſt new moon; to find which, add together the epact, the day of the current month, and the number for the month ; the ſum, if it exceeds not 29, is the age of the moon ; but if it be more, deduct 29 from it in months which have but 30 days, and 30 in thoſe which have 31 days, the remainder will be the moon's age. See EPACT.

The number to be added for each month is as follows : for January 0, February 2, March 1, April 2, May 3, June 4, July 5, Auguſt 6, September 8, October 8, November 10, and December 10. At the end of 19 years, the moon's age returns upon the ſame day of the month, but falls ſhort of the preciſe time of the day.

AGENDA, among merchants, a memorandum book, in which all the buſineſs to be tranſacted, both at home and abroad, is ſet down.

AGENT, in a general ſenſe, any thing that acts and produces an effect.

AGENT, in mechanics and philoſophy, a body, or any power in general, which produces or tends to produce any effect by its actual motion, or tendency to motion. See the articles POWER and ACTION.

AGENT, among merchants, one intruſted with the management of an affair, or who tranſacts the buſineſs of another.

Moral AGENT, a rational creature, capable of regulating his actions by a certain rule.

AGENT *and Patient*, in law, a perſon who is at once the doer of a thing, and the party to whom it is done. Thus when a man who is indebted to another, makes his creditor his executor, and dies, the executor may retain ſo much of the goods of the deceaſed as will ſatisfy his debt ; by which means he becomes agent and patient ; that is, the perſon who both pays and receives the debt.

AGGLUTINANTS, in pharmacy, a general name for all medicines of a glutinous or viſcous nature ; which, by adhering to the ſolids, contribute greatly to repair their loſs.

AGGLUTINANTS, among ſurgeons, topical remedies of a glutinous texture, as the turpentines, ſarcocolla, iſinglaſs, &c.

AGGRAVATION, the action of heightening a fault, or rendering it more criminal.

AGGREGATE, in a general ſenſe, the ſum of ſeveral things added together, or the collection of them into one total. Thus natural bodies are the aggregate or aſſemblages of corpuſcules, united together by the principle of attraction ; and the aggregate of the ſeveral quantities is the ſum of theſe quantities. See SUM.

AGGRESSOR, in law, the perſon who began the quarrel, or gave the firſt aſſault. It is of the utmoſt importance to know which of the two parties is really the aggreſſor, and accordingly this matter is ſtrictly enquired into by the court.

* AGINCOURT Battle of, in 1415, in the reign of Henry V. Henry finding the paſſes clear, forded the river between St. Quintin and Peronne, and advancing to Blagney, perceived the whole French army on the march towards Rouſeauville and Agincourt, which lay in his route to Calais. He now ſaw his difficulties encreaſe, and began to repent of the raſhneſs of his conduct. He found himſelf in the midſt of an enemy's country, during the ſevereſt ſeaſon of the year, at the head of an handful of men, exhauſted by diſtemper and fatigue, deſtitute of proviſion and proper accommodation, while a prodigious army, amounting to one hundred thouſand fighting men, blocked up the paſſage to the only place where he could expect to find ſhelter and aſſiſtance. In this emergency, he ſent a meſſage to the French conſtable, offering to reſtore Harfleur, and repair all the damage he had done to the French, nay even to give ſecurity that he would never again attempt to invade France, if they would allow him to paſs unmoleſted to Calais. Such was the offer made by the Black Prince, when he found himſelf ſurrounded at Poitiers ; and the anſwer which Edward received was the ſame which they now returned to Henry ; they rejected his offer, and propoſed that he and his army ſhould ſubmit at diſcretion. When he treated this propoſal with diſdain, they ſent three heralds to defy him to battle, leaving the time and place to his choice : he replied, that weakened and fatigued as he was, he would not ſeek an engagement ; but as he intended to continue his route to Calais, they might attack him when and where they ſhould think proper to chuſe the ſcene of action. Then they took poſt between Rouſſeauville and Agincourt, and gave him notice that they would engage him on the twenty-fifth day of October. As he could not poſſibly avoid an action, he accepted the challenge and preſented the herald who brought it with a gratification of a rich robe and two hundred crowns. During this interval of three days, he took all the precautions which the experience of the moſt able commander could have dictated. He procured for his ſoldiers ſuch refreſhment as the nature of their ſituation would afford : he ordered their weapons and armour to be refitted and repaired : he invented a kind of ſharp ſtakes for the defence

fence of the archers : he continued night and day upon horſeback, riding through the lines to animate the ſoldiers, and ſuperintend the œconomy of the camp : he encouraged the army with hopes of ſucceſs, by reminding them of the great victories obtained in France by their forefathers ; aſſuring them that the enemy, though numerous, were raw, undiſciplined, and imprudent ; and he gave them plainly to underſtand, that they had no reſource from death or captivity, but in the extraordinary efforts of their own valour. His affability, activity, and confidence, inſpired the ſoldiers with ſuch reſolution and ardour, that far from dreading the number of the foe, they wiſhed eagerly for the battle, and bore their diſtreſſes with heroic patience, in hopes of being relieved by a ſpeedy victory. Indeed they ſeemed to have loſt all ſenſe of diſtinction in numbers; for, on the day that preceded the battle, David Gam, a Welch Captain whom the king had ſent to obſerve the poſture of the enemy, being interrogated by his majeſty concerning the number of the French army, replied, with great compoſure, that there was number enough to be killed, enough to be taken priſoners, and enough to run away. While Henry thus acted the part of an able and diligent commander, the French officers ſpent their time in reſt and rejoicing. When they conſidered the handful of Engliſh, who did not exceed fourteen thouſand enfeebled wretches, half dead, with famine and diſeaſe, they looked upon the victory as having already declared in their favour. They are even ſaid to have played at dice for the Engliſh priſoners before they were taken, and to have ſent orders to the neighbouring villages to prepare lodging for thoſe ſtrangers ; on the morning of the engagement, their inſolence and preſumption roſe to ſuch a pitch, that they detached another herald to Henry, to know what he propoſed to give for his ranſom. This inſult he received with the moſt contemptuous moderation, deſiring the meſſenger to tell thoſe that ſent him, a little time would decide to whom the ranſom would belong. On the day appointed for the deciſion of this great conteſt, both armies were drawn up at break of day in order of battle ; and the conſtable D'Albret, who commanded the French, committed an error which was altogether inexcuſable, in chuſing a narrow piece of ground, flanked by a rivulet and a thick wood, where he could not extend his front ſo as to encloſe the Engliſh ; where his cavalry could not act, and his ſuperiority of number, inſtead of being an advantage, was an incumbrance and misfortune. He divided his army into three bodies, and he himſelf commanded the van, accompanied by the dukes of Orleans and Bourbon, the counts of Eu, Vendome, and Richemont, the famous marechal de Boucicaut, the great maſter of the croſs-bows, the lord Dampierre admiral of France, the dauphin D'Auvergne, and ſeveral other officers. The ſecond line was commanded by the duke of Alencon, aſſiſted by the duke of Bar, the counts of Vaudemont, Nevers, Salines, Rouſſi, and Grand Pre. At the head of the third body were the counts of Marle, Damponartin, Faquenberg, and the ſieur de Lauroy. While the French were employed in arranging theſe lines, which ſtood ſo thick that the ſoldiers had not room to uſe their weapons, Henry concealed four hundred lances in a wood upon the right, and about two hundred and fifty choice archers on the left, in a low meadow covered with buſhes. In order to extend his front equal to that of the enemy, he was obliged to form his little army into one line : the right wing commanded by the duke of York, with the lords Beaumont, Willoughby, and Stanhope, was advanced a little way before the center, which the king took under his own conduct, attended by his brother the duke of Glouceſter, the earl Mareſchal, and the young earl of Suffolk, whoſe father had died at Harfleur. The left, which may be denominated the rear, as it had not advanced ſo far as the other two diviſions was left under the direction of the duke of Exeter, and nothing could be more prudent than this diſpoſition, which was made by the advice of Sir Thomas Erpyngham, a renowned ſoldier, who acted as Henry's marſhal, and was the perſon who afterwards gave the ſignal for the attack. The king himſelf appeared in the front of the line, mounted on a ſtately white courſer, in ſplendid armour, with a golden crown fixed by way of creſt to his helmet ; four royal banners were diſplayed before him ; he was followed by a great number of led horſes in rich capariſons, and ſurrounded by the chief officers of the court and army. Whether the French generals were ſtartled at the admirable diſpoſition, and firm countenance of the Engliſh, or had received orders to avoid a battle, certain it is, they ſtood in array, at the diſtance of two hundred and fifty paces, without proceeding to the attack ; and the king of England began to imagine their intention was to ſtarve him into a ſurrender. This was the wiſeſt courſe they could have taken ; and muſt have been attended with ſucceſs, had Henry continued inactive; for his proviſions were already quite exhauſted, and the weather was ſo rainy that it would have been impracticable to keep the field much longer. Perceiving this drift, and conſcious of his own ſituation, he ordered the archers to ſtrike their ſtakes, which they planted by way of paliſadoes in the front and flank; ſo that they could advance before and retire behind them occaſionally. He rode along the line, exhorting and encouraging the ſoldiers to behave like Engliſhmen. Then alighting from his horſe, he took his ſtation in the main body, and commanded Sir Thomas Erpyngham to throw up his truncheon as the ſignal for the attack. The whole line raiſing a loud ſhout, advanced againſt the enemy; but Henry fearing they would be out of breath before they could come to cloſe fight, ordered them to halt about mid-way, and there the archers planted their piquets, to ſecure them from the French cavalry. The battle was begun by a flight of arrows, which did great execution, becauſe the enemy ſtood ſo thick that every ſhaft took place, and even penetrated the armour of the Frenchmen at arms. The Engliſh bow-men had advanced beyond their ſtakes to make this general diſcharge; but ſeeing the enemy's cavalry in motion to attack them, they retired within their paliſadoes, with admirable order and dexterity, and plied the aſſailants ſo warmly and cloſely, that they began to fall into confuſion. The troops that lay in ambuſh on the right and left, charging them ſuddenly in flank, completed the diſorder: at the ſame time the archers flinging their bows, ruſhed out upon them with their battle axes and daggers, and a terrible ſlaughter enſued. Though this front line of the French conſiſted of the beſt troops, animated by the preſence and example of ſo many noblemen, and was commanded by the conſtable in perſon, it could not ſuſtain the impetuoſity of the attack, and being once diſordered, all oppoſition was at an end: far from being able to rally, they had not room to turn, and were ſo encumbered with one another, that they themſelves contributed to the victory of the Engliſh, who ſlaughtered them in heaps, until their arms were tired with the works of carnage. Though the conſtable, with a great number of principal officers, was ſlain, and the firſt line of the French entirely routed, the battle continued ſtill undecided; and the ſecond line, commanded by the Duke of Alencon, ſtood firm and eager to engage. The Engliſh who were fatigued with action, retiring behind the main body, to take breath and form themſelves anew, Henry in perſon led up his diviſion to the charge, and being animated by the ſucceſs of his firſt effort, (added to his natural courage and vivacity) performed exploits of valour which equally aſtoniſhed his own ſoldiers and thoſe of the enemy. While he thus exerted himſelf, in a manner that did much more honour to his perſonal proweſs than to his conduct, eighteen French knights, who had engaged in an aſſociation to take him dead or alive, made their way ſword in hand, to the place were he fought, and one of them ſtunned him with the blow of his battle-ax, which, however, did not penetrate his helmet. In all probability he muſt have fallen a ſacrifice to the determined reſolution of thoſe aſſociates, had not David Gam the Welch Captain, and two other officers of the ſame nation, ruſhed between him and the aſſailants, and loſt their lives in his defence. When he recollected his ſpirits, he found thoſe three gallant ſoldiers dying of the wounds they had received, and knighted them as they lay upon the field of battle. The eighteen French knights were killed to a man; and Henry ſtill more ſtimulated by the danger he had eſcaped, ruſhed into the midſt of the enemy with redoubled impetuoſity, until he and his brother Gloceſter, who fought by his ſide, found themſelves quite ſeparated from the troops they commanded. In this hazardous ſituation, Glouceſter was felled to the ground by the ſtroke of a mace; and Henry covering him with his ſhield, ſuſtained the ſhock of a whole hoſt of aſſailants, until the Duke of York came to his relief. At that very inſtant he received a blow upon the head, that made him ſtagger and fall upon his knees; but he ſprang up in a moment, and laid the aggreſſor at his feet. His troops inſpired by his example to a degree of enthuſiaſm, ruſhed forward as one man with irreſiſtible fury, which bore down all before them, and diſordered the enemy in ſuch a manner, that all the endeavours of their officers could not reduce them to form, or perſuade them to oppoſe the career of the Engliſh. The Duke of Alencon ſeeing his diviſion in danger of being totally defeated reſolved to make one attack that ſhould either reſtore the battle, or ſave him the mortification of ſurviving the diſgrace of his country. He put himſelf at the head of ſome choſen volunteers, and cutting his way to the ſpot where Henry

Henry fought, exclaimed that he was the Duke of Alencon; then ruſhing upon the Engliſh monarch, cleft his crown with the firſt ſtroke of his ſword: he had not an opportunity of repeating the blow; for Henry returned the ſalutation in ſuch a manner as brought him to the ground; and with his own hand ſlew two of his followers. He endeavoured to ſave the life of Alencon; but the guards were ſo exaſperated at his attempt, that they diſpatched him immedietely, before the king could interpoſe effectually in his behalf. After the death of this nobleman, the French made no oppoſition; but either endeavoured to ſave themſelves by flight, or voluntarily offered their throats to the ſlaughter.

AGIO, in commerce, a term chiefly uſed in Holland, and at Venice, to ſignify the difference between the value of bank ſtock and the current coin. The agio, in Holland, is generally three or four per cent. And at Rome it is from fifteen to twenty-five per cent; but at Venice the agio is fixed at twenty per cent.

AGIO is alſo uſed to ſignify the profit ariſing from diſcounting notes, bills of exchange, &c.

AGISTMENT, or AGISTATION, in law, ſignifies the taking in other people's cattle to graze at ſo much per week. The term is peculiarly uſed for taking cattle to feed in the king's foreſts, as well as from the profits ariſing from that practice.

AGISTMENT, is likewiſe uſed in a metaphorical ſenſe to ſignify any tax, burden, or charge. Thus the tax levied for repairing the Banks of Romney Marſh, was called agiſtamentum.

AGISTOR, or AGISTATOR, an officer belonging to foreſts, who has the care of the cattle taken in to be grazed, and who levies the monies due on that account. They are generally called queſt takers, or gift-takers, and are created by letters patent. Each royal foreſt has four agiſtors.

AGITATORS, in hiſtory, certain officers ſet up by the army in England, in 1647, to take care of its intereſts. Cromwell joined the agitators in order to promote his own intereſts; and accordingly cauſed them to be aboliſhed as ſoon as his own power was ſufficiently eſtabliſhed.

AGNUS *Caſtus*, or the chaſte-tree, in botany, a ſmall tree, or rather ſhrub, with tough branches, digitated narrow leaves, and monopetalous purpliſh flowers, ſtanding in ſpikes on the tops of the branches, followed by oblong whitiſh ſeeds. It is a native of the warmer climates, and cultivated in ſome of our gardens. The ſeeds of this plant were formerly conſidered as antiphrodiſiacs; experience does not diſcover in them any ſuch virtue, and ſome have even aſcribed to them an oppoſite tendency.

But of whatever kind their virtues are, they do not, from their ſenſible qualities, appear to be very conſiderable. *Lewis's Hiſtory of the Materia Medica.*

AGNUS DEI, in the Roman church, a cake of wax, ſtamped with the figure of a lamb ſupporting a croſs. Theſe are conſecrated with great ſolemnity, and then diſtributed to the people. The words are pure Latin, and ſignify *lamb of God*; a name given it from the figure impreſſed upon it.

AGNUS *Scythicus*, the Scythian lamb, in natural hiſtory, the name of a fictitious plant, reſembling a lamb, ſuppoſed to grow in Tartary.

AGON, among the ancients, implied any diſpute or conteſt, whether it had regard to bodily exerciſes, or the accompliſhments of the mind: and therefore poets, muſicians, painters, &c. had their agonies, as well as the athletæ. Games of this kind were celebrated at moſt of the pagan feſtivals, with great ſolemnity, either annually, or at certain periods of years. Among the latter were celebrated at Athens, the *agon gymnicus*, the *agon nemeus*, inſtituted by the Argives in the fifty-third Olympiad, and the *agon glympius*, inſtituted, by Hercules, 430 years before the firſt Olympiad. The Romans in imitation of the Greeks, inſtituted conteſts of this kind. The emperor Aurelian eſtabliſhed one under the name of *agon ſolis* the conteſt of the ſun; Diocleſian another, which he called *agon capitolins.* which was celebrated every fourth year, after the manner of the Olympic games.

AGON alſo ſignified one of the miniſters employed in the heathen ſacrifices, and whoſe buſineſs it was to ſtrike the victim.

AGONALIA, among the ancient Romans, ſolemn feaſts celebrated in honour of the god Janus, or, according to ſome, in honour of the god Agonius, whom the Romans always invoked before they undertook any enterprize of importance.

AGONITHETA, in ancient hiſtory, the preſident or magiſtrate who preſided at the ſacred games, and adjudged the prizes to the victors.

AGONY, among phyſicians, extreme pain, or the utmoſt efforts of nature ſtruggling with a diſeaſe.

* AGRA, the capital city of the province of Agra, in Indoſtan, or Hindoſtan. It is ſeated on the river Semina, and is one of the greateſt cities of the Indies, being nine miles in length. The houſes of the great men are very beautiful and well built; but thoſe of private perſons are mean. They ſtand at a diſtance from each other, and are hid by the walls which ſurround them, for fear their women ſhould be ſeen. The moſt remarkable things are the palace, and the fine ſepulchres near the city. The palace, which is built of ſtone, is four miles in compaſs, and is full of ornaments of gold and other precious materials, finely wrought; ſo that it may be reckoned one of the wonders of the world. The city has eight hundred baths, and ſeven hundred moſques. The ſepulchres about the city, are very fine; and there is not an eunuch of the king's haram, but is very ambitious of rearing a magnificent one; for they commonly amaſs great riches, and hardly knowing what to do with their money, uſe it in building ſepulchres to preſerve their memory. The inhabitants are very numerous, and chiefly Mahometans, though there are a vaſt number of Pagans, and ſome reckon twenty-five thouſand Chriſtian families. It is a place of great traffic and reſort for the Chineſe, Perſians, and diſtant inhabitants of India.

AGRARIAN, in a general ſenſe, implies ſomething belonging to or connected with, lands. The word is derived from the Latin, *ager*, a field.

AGRARIAN *Laws*, among the Romans, thoſe laws relating to the diviſion and diſtribution of lands; and of theſe there were a great number, but that called the Agrarian law, by way of eminence, was publiſhed by Spurius Caſſius, about the year of Rome 268, for dividing the conquered lands equally among all the citizens, and limiting the number of acres each citizen might enjoy.

AGREEMENT, in law, the conſent of two or more perſons to any thing done, or to be done.

AGRICULTURE, in a general ſenſe, implies the art of rendering the earth fertile by tillage and culture.

It is derived from the Latin word, *agricultura*, compounded of *ager*, a field, and *colo*, to till.

In the moſt enlightened ages, books of Huſbandry were written by men whoſe exalted ſtation ſufficiently indicates the high value then ſet upon the art they taught. Xenophon, equally diſtinguiſhed in philoſophy and in arms, ſhews, by his commendations of Cyrus, the eſtimation in which agriculture was held by thoſe great men. Hieron, king of Syracuſe, did not think it beneath his dignity to write upon this eſſential art, for the benefit of his ſubjects. The chiefs of the two greateſt republics in the world, Cato, conſul of Rome, and Mago, ſufes of Carthage, employed part of their time in teaching the art of huſbandry. Theſe pieces are, in the opinion of the ancients, the beſt calculated for explaining rural affairs. Amidſt the Aſiatic luxury, and that of the Roman empire, valuable treatiſes of huſbandry appeared, written by Attalus, king of Pergamus; by Archelaus, king of Cappadocia; by Valerius Aſiaticus, who was judged worthy of the empire, after the death of Caligula; and by the emperor Albinus. Some few fragments of the Greeks are the firſt rudiments of huſbandry upon record; and the elder Cato is the moſt ancient Latin author whoſe writings upon this intereſting ſubject have reached our hands. His inſtructions are very judicious, but too conciſe. Varro added elegance of language to an improved Treatiſe of Agriculture; and ſoon after him, Virgil publiſhed his juſtly admired Georgics; by far the moſt laboured and highly finiſhed of all his works: theſe, indeed, he had moſt at heart; and upon theſe he choſe to reſt his future reputation. Columella afterwards collected, with great judgment, whatever was valuable in the writings of his predeceſſors, and enriched them with his own obſervations on the ſubject. His work is one of the choiceſt remains of antiquity, and has ſcarcely been equalled by any author ſince his time. The irruptions of the barbarous nations of the north, unacquainted with the ſweets of ſociety, and the bleſſings of civil liberty, ſoon aboliſhed improved agriculture. Arms were their only object. Their meaneſt ſlaves were intruſted with their trifling huſbandry. The improvements made in England, in the reign of Elizabeth, ſhew, that the proteſtants, who were obliged to take ſhelter in the then free ſtates, and particularly in Switzerland, had, with their love of liberty, learned an improved agriculture. In the next age, Hartlib is not leſs famed for his knowledge in farming, than for his friendſhip with Milton. At this period, from which England may date her grandeur, wealth and power, writers of great character undertook the truly patriotic art. Such were Platt, Worlidge, Evelyn, &c. whoſe works did honour to the age, and proved highly beneficial to their country. In France, two eminent phyſicians thought this ſubject worthy of their pens, and gave their country the *Maiſons Ruſtiques*, a work which, afterwards perfected by a third phyſician, has undergone numerous editions. Nor does that country now by any means loſe ſight of this important ſubject; Duhamel has ſince publiſhed many excellent treatiſes on huſbandry. In Switzerland, a ſociety eſtabliſhed at Berne has already favoured the world with ſuch ſpecimens of the great judgment of its illuſtrious members, as leave no room to doubt but that their diſtinguiſhed care and aſſiduity will be a laſting ſource of advantages to all mankind. The general ſpirit of improvement in agriculture, ſo remarkably exerted in the different nations of Europe, calls upon us not to loſe that ſuperiority which the happineſs of our conſtitution and climate have given us. The ſociety of improvers in the knowledge of agriculture in Scotland, will ever deſerve ſincere thanks for many proofs of that truly laudable ſpirit which conſults the general good of mankind. The ſociety in Dublin have diſtinguiſhed themſelves ſo remarkably by their ſound and unbiaſſed judgment and aſſiduity, in promoting the real intereſt of their country, that the parliament of that kingdom are now become their patrons, and have, with a truly public ſpirit, ordered large ſums for carrying into execution their uſeful deſigns. Their obſervations, replete with excellent inſtructions, want only to be continued and increaſed. The London ſociety for the encouragement of arts, manufactures, and commerce, is formed upon a plan ſo univerſally beneficent, and directed by gentlemen of ſuch high rank, and great abilities, as, when we conſider that they actually take every opportunity, which prudence and intelligence can ſuggeſt, to promote the laſting welfare of their fellow-citizens, ſcarcely leaves room for any farther wiſh, unleſs it be, that they would impart to the whole world ſome portion of their treaſures of uſeful knowledge.

It is well known that the real ſtrength of every country depends upon its population; and a little acquaintance with the principles of ſound policy will ſhew, that the only ſolid baſis of a numerous population is agriculture. Without this, the ſubſiſtence of a nation is precarious. Uncertainty of ſubſiſtence hinders people from marrying, and even induces them to quit their native ſoil. Huſbandmen, whoſe children are their riches, are of all perſons, the fitteſt and moſt inclined to propagate their ſpecies. Trade, though a great, is but a ſecondary, ſource of wealth, and will, if carried too far, deſtroy the parent which gave it birth, by diminiſhing agriculture, depopulating the country, and annihilating, by degrees, that eſſentially neceſſary claſs of men who cultivate the earth. The eaſe with which the artificers of luxury live, ſeduces the indigent peaſant, draws him to towns and cities, and the country is deſerted. But if agriculture be properly countenanced, encouraged, and put in ſo flouriſhing a ſtate as to afford a comfortable ſubſiſtence to the very great numbers that may be employed in it, the huſbandman will not forſake the ſolid occupation of his forefathers, to which he has been trained up; commerce will not exceed the bounds within which it ought to keep; luxury, that bane of mankind, will be effectually checked; and a martial ſpirit will animate every free-born youth.

Thoſe who ſuppoſe a country life is repugnant to politeneſs, are ſurely much miſtaken. True politeneſs, the moſt cordial affection, the ſincereſt friendſhip, and unfeigned courteſy, without the grimace of ſtrained compliments, have often been found among the labouring rural race, inhabitants of cottages.

By proper application to agriculture, the philoſopher, from whom we muſt expect the greateſt improvements, will have a pleaſing opportunity of gratifying his deſire, by enlarging his knowledge of nature: the individual, who puts in practice the diſcoveries of the philoſopher, will find the ſureſt way of increaſing his fortune; and the ſovereign, who directs and favours the labours of all, will eſtabliſh his power, independant of all others, upon a foundation which cannot be ſhaken. Agriculture may be ſubdivided into three different parts, comprehending the different ſoils required to be tilled:

1. Arable lands of all kinds.
2. Lands employed in paſturage, whether meadow, marſhy, or boggy.
3. Wood-lands, or thoſe laid out in nurſeries, plantations, foreſts, woods, &c.

See SAND, CLAY, LOAM, WHEAT, BARLEY, PLOUGHING, SOWING, &c.

AGRIMONY, in botany, the name of a hairy plant; with winged leaves, compoſed of oblong indented ſegments, with ſmaller portions between, ſet on middle ribs which ſtand alternately on the ſtalk: on the top grows a like ſpike of pentapetalous yellow flowers, followed by little burs, containing, each, one or two ſeeds. It is perennial, and grows wild in hedges, and about the ſides of fields. The leaves of agrimony have a ſlightly bitteriſh roughiſh taſte, accompanied with an agreeable, though very weak aromatic flavour. The flowers are, in ſmell, ſtronger and more agreeable than the leaves, and in taſte ſomewhat weaker. They readily give out their virtues both to water and to rectified ſpirit: the leaves impart to the former a greeniſh yellow; to the latter a deep green colour: the flowers yield their own deep yellow tincture to both menſtrua. In diſtillation with water, there ariſes a very ſmall portion of a yellowiſh eſſential oil, which ſmells ſtrongly and agreeably of the herb. Agrimony is one of the milder corroborants; and in this intention is ſometimes employed, eſpecially among the common people, againſt habitual diarrhæas, and cachectic, and other indiſpoſitions from a lax ſtate of the ſolids: infuſions of the leaves, which are not ungrateful, may be drank as tea. It is ſometimes joined with other ingredients in diet drinks, for purifying the blood; and in pectoral apozems. *Lewis's Hiſtory of the Materia Medica.*

AGRIMOIDES, in botany, is the name of a genus of plants with roſaceous flowers, growing in ſome of the mountainous parts of Italy, and agreeing in their medicinal virtues with the agrimony deſcribed in the preceding article.

AGRIPPA, a name given by the ancient as well as modern phyſicians, to children born with their feet foremoſt. See DELIVERY.

*AGRIPPINA, the daughter of Germanicus, the ſiſter of Caligula, and the mother of Nero, was extremely beautiful and witty, qualities which ſhe rendered ſubſervient to her debaucheries and ambition. She was thrice married; the laſt time to the emperor Claudius, her uncle, whom ſhe poiſoned, in order to raiſe Nero to the throne. Being told, that Nero would one time or other put her to death, "No matter, ſhe replied, let "him kill me, provided he does but "reign." At length, what had been told her came to paſs; Nero ſent his guards to ſtab her; and, as the centurion followed her with his ſword in his hand, Agrippina cried, "Strike firſt this belly, "for producing ſuch a monſter as Nero."

AGROSTOGRAPHY, among naturaliſts, the hiſtory, or deſcription of graſſes. Scheuchzer has publiſhed a treatiſe under the title of Agroſtographia, containing an accurate deſcription of ſeveral hundred ſpecies of graſs.

AGRYPNIA, among phyſicians, an inaptitude to ſleep, a troubleſome ſymptom of feveriſh and other diſorders.

AGRYPNIA, in the Greek church, the vigil of any of the greater feſtivals.

AGUAGUIN, in botany, the name of a ſhrub, whoſe leaves reſemble thoſe of our lilac. It is a native of Africa, where it is greatly eſteemed for its balſamic and vulnerary qualities.

AGUE, a general name for all periodical fevers, which, according to the different times of the returns of the feveriſh paroxyſm, are denominated tertian, quartan, and quotidian.

Tertian AGUE, is that which attacks the perſon every other day.

There is no fever which diſcovers the nature and genius of the febrile motion in general, and which at the ſame time infeſts the veſſels and nervous parts, ſo much as the tertian. It ſpares neither age, temperament, nor ſex. When this ſpecies of intermitting fever is of the regular kind it is attended with the following ſymptoms: at firſt the head achs, the limbs ſeem weary, there is a pain in the loins about the firſt vertebra of the back, and which aſcends towards the epigaſtrium, with a painful ſenſe of a tenſion in the hypocondria, and a coſtiveneſs of the body. This is ſucceeded by a coldneſs of the external parts, eſpecially of the noſe and ears, a ſtretching, yawning, ſhivering, and ſhaking, ſometimes ſo much as to make the bed tremble under the patient; the pulſe is ſmall, contracted, and weak; ſometimes the patient is troubled with thirſt; then follows a nauſea, with a fruitleſs reaching to vomit; but ſometimes a pituitous, bilious, or green matter is brought up, commonly joined with a troubleſome cough, and an expectoration of phlegm, derived from the acid, clammy crudities of the ſtomach; to theſe ſucceeds an anxious, burning and dry heat, which pervades the whole body; the face, which was collapſed and pale, the contracted, rigid ſkin, and the almoſt empty veſſels of the hands and feet, begin to riſe, grow red and turgid; the pulſe becomes more full and quick, reſtleſſneſs increaſes, the breathing is more difficult, and the patient, with his eyes almoſt cloſed, begins to talk a little wildly. In ſome time the ſymptoms begin to abate, the heat becomes mild, the ſkin relaxes and becomes moiſt; the urine is of a flame colour, but without ſediment; the pulſe is moderate, and then a ſweat breaking out, terminates the paroxyſm. The duration of the fit is uncertain ; ſometimes it ends in ten or eleven hours, and ſometimes not in twenty-four. On the intercalary day, the body is ſtill feeble and coldiſh, with a diſpoſition to ſhiver ; the pulſe is ſlow and weak ; the urine is turbid and depoſits a ſediment, or there is a nubecula, which ſhews a diſpoſition thereto.

The baſtard, or ſpurious Tertian Ague is attended with milder ſymptoms, the heat is not ſo burning, the vomiting is not ſo frequent, and the urine is not ſo high coloured ; but then it is more lingering, and on the intermediate day there is a laſſitude and want of appetite. This attacks men of an inactive diſpoſition, and women whoſe bodies are of a looſe texture, in the autumnal ſeaſon. The fit of the irregular tertian obſerves no particular time, for it ſometimes comes on in the morning, ſometimes in the afternoon, in the evening, or at midnight. The paroxyſm is ſometimes longer, ſometimes ſhorter ; the urine lets fall no ſediment within the time of remiſſion or intermiſſion ; the ſweating is either too ſparing or too profuſe. When the fit is off ſeveral remarkable ſymptoms often appear, as a looſeneſs, a bleeding at the noſe, ſickneſs at the ſtomach, a violent heartburn, or pains in the belly. Theſe ſort of agues are generally epidemic, and moſt commonly appear in the ſummer and autumn. Sometimes a tertian ague is double, which may be diſtinguiſhed from a quotidian, by the time of the fits, which is not the ſame every day, but every other day.

Continual Tertian Ague is that which begins with ſhivering and ſhaking, an axiety, vomiting, loſs of ſtrength, and then a violent heat. The fits do not intermit, but only remit. The pulſe continues frequent with heat and debility, and all the ſymptoms return with freſh vigour every other day ; but at length admit a perfect intermiſſion.

An endemic Tertian Ague is proper to certain places, of a low ſituation, and full of marſhes, which produce a great number of gnats and other inſects, ſuch as ſome parts of Kent, and the Hundreds of Eſſex. In ſuch places the natives themſelves have ſlight attacks of it every year, and ſtrangers ſeldom or never eſcape without a preſervative, which is only the bark infuſed in brandy, with a little ſnake-root, two ounces of which are to be taken night and morning.

A Quartan Ague is that which has two fits in four days, and two days quite free from a fit. It generally begins about four or five in the afternoon, though ſometimes ſooner and ſometimes later, with a great laſſitude, ſtretching, a blunt pain in the head, back, loins, and legs : the feet and hands are cold, the whole body is pale, the face and nails livid, and the whole body affected with a ſhivering and ſhaking. The tongue and the lips tremble, the breathing is difficult, with reſtleſſneſs and toſſing ; the pulſe is contracted and hard, and ſometimes unequal ; and there is an anxiety about the præcordia. Theſe ſymptoms continue about two or three hours ; in ſome the body is coſtive, in others there is a ſtimulus to ſtool and to make water : in ſome there is a nauſea or vomiting, with ſtools. Some advanced in years have their minds pretty much diſturbed : the heat comes on gradually, not burning but dry ; the pulſe becomes equal, quick, and large ; but the dull pain in the head remains, with a vertiginous affection ; the ſkin becomes a little moiſt : and in about four or ſix hours the ſymptoms vaniſh, except a dull pain in the bones, joints, and feet. The urine during the fit is ſometimes thin and watery, ſometimes thick, and depoſits a ſediment. Sometimes a quartan ague is double, that is when the fits come on every day at different hours ; and it is ſpurious when a paroxyſm begins at any other time of the day than that above mentioned. It is ſaid to be continual when on the intercalary days, there are ſhiverings and pandiculations, with a greater heat than uſual, a quicker pulſe, a want of appetite, a debility, a dryneſs of the mouth, a lightneſs of the head, a diſturbed ſleep, and a reddiſh urine, with a thick roſe-coloured ſediment.

A Quotidian AGUE, *or Fever*, returns every day, and is not ſo common as the tertian or quartan. The acceſſion of this fever is about four or five in the morning, with cold and ſhivering; to which ſucceeds a cardialgic nauſea, and inflation of the belly ; in ſome a pain in the head, in others fainting fits ; in moſt, vomiting or ſtools, or both : then comes on a moderate heat, with thirſt, but not very intenſe ; the pulſe, which was before irregular and weak, becomes more quick, but not very hard ; the urine is not of a flame, but rather of a citron colour, and turbid. Some are exceeding ſleepy. At length a moderate ſweat ſupervenes ; and in about ten hours the fit goes off, leaving the body dull and heavy. When this diſeaſe varies from the above deſcription, it is then called ſpurious or anomalous. From theſe ſymptoms it appears, that the whole nervous ſyſtem is exagitated, and ſuffers greatly by ſpaſtic conſtrictions, which, proceeding chiefly from the medulla ſpinalis, affect preternaturally, not only the coats of the veſſels, but all the fibres throughout the body, and thence greatly diſturb the motion both of the ſolids and fluids. The material cauſe of this, and all other fevers, is a matter of an active nature endued with a cauſtic acrimony, which ſolicits the internal and exquiſitely ſenſible parts to ſpaſmodic contractions. It is generated chiefly in the biliary ducts and flexure of the duodenum, where the vitiated, bilious, ſalival, and pancreatic juices, meeting with the crudities of a bad digeſtion, ferment together, and not being timely expelled, become virulent. This matter, paſſing through the lacteals, into the blood, and thence into the nervous parts of the head, medulla ſpinalis, inteſtines, and ſtomach, as alſo to the nervous coats of the excretory and ſecretory ducts, excite an univerſal ſpaſm, which forces the blood, firſt to the interior and greater veſſels; afterwards the ſyſtoltic motion of the heart and arteries being increaſed, the motion of the whole maſs of blood and humours is accelerated, the obſtructions of the ſmall veſſels of the nervous parts are opened; upon which the ſpaſm ceaſing, the excretory ducts are relaxed, the febrile matter paſſes off through the pores of the ſkin by perſpiration or ſweat, and the fit ceaſes, till, by the generation of freſh matter, a new paroxyſm is produced. *Hoffman.*

It appears from the experiments of Langriſh, that the blood in quotidians is more denſe and tenacious than in tertians; and in tertians than in quartans: ſo that in quotidians, cæteris paribus, it comes neareſt to an inflammatory ſtate; and it is commonly obſerved, that if the fever, from a regular tertian, run into a ſemitertian or quotidian, or greatly anticipates the time of the regular paroxyſm, a remitting or continual fever is ſoon the conſequence.

It is neceſſary to be known, that from February to Auguſt, agues are ſaid to be vernal; and from Auguſt to February, autumnal; and, that in the beginning of the autumn, they often reſemble continual fevers, and require a different manner of cure. No fever emaciates a patient ſooner than a tertian, if attended with a more intenſe and laſting heat. The autumnal and winter agues are obſtinate and hard to cure, eſpecially if there be any fault in the viſcera: on the contrary, the vernal and ſummer agues, if rightly treated, are eaſily vanquiſhed. Agues, injudiciouſly managed, terminate in cruel and incurable diſeaſes, as a ſlow or hectic fever, a ſudden ſwelling of the feet, a dropſy, œdematous tumors, the jaundice, ſcorbutic cachexy, the dry aſthma, the hypochondriac paſſion; and in infants, a fatal epilepſy. Sydenham obſerves, that a ſwelling of the abdomen in children, and of the legs in adults, denotes a ſolution of the diſeaſe; and that a pain in the tonſils, hoarſeneſs, hollow eyes, and a ghaſtly countenance, portend death. As to the cure, when a load of vitiated humours in the ſtomach and duodenum require depletion, which is known from having indulged in too plentiful eating, from an anxiety of the præcordia, from eructations, and a bitter taſte in the mouth, a vomit of ipecacuanha, after the firſt fit, in the time of intermiſſion, is to be given. If it be an autumnal ague, purging, and an emetic may be convenient to prepare the body for the bark, which is eſteemed a ſovereign remedy in this diſtemper; however, it is proper to ſee two or three fits over before the cure of an autumnal ague be attempted with the bark; in vernal agues leſs preparation is neceſſary. If the bark be good, and freſh powdered, ſix drams, taken in the interval of two fits, are generally ſufficient to ſtop a vernal ague; and an autumnal one will ſeldom require more than an ounce. But though this quantity may remove the fit for the preſent, yet the uſe of the bark muſt be continued for a conſiderable time, to prevent a relapſe. After the fit is ſtopped, two or three doſes a day for the firſt week; and once a day for the ſecond week; and then once in three or four days for a month. In weak conſtitutions, infuſions and decoctions of the bark agree better than the ſubſtance. Some recommend plaiſters and cataplaſms; but theſe are leſs certain. A diarrhœa prevents the effects of the bark, and therefore ſhould be ſtopped with all convenient ſpeed: When this diſtemper is attended with a quincy, or any great inflammations, obſtructions, or impoſthumes, the bark is dangerous, and ought not to be given before the removal of ſuch ſymptoms. The cold bath is recommended as one of the laſt things in the cure of an ague: but this is not to be uſed in winter, nor by old or weak perſons. After all other things have proved unſucceſsful, a removal from a cold air to a warmer has performed a cure. *Shaw.*

AGUL, in botany, the name of a ſmall prickly podded ſhrub.

AGUARAH, in antiquity, the name of a ſilver coin ſtruck by the Jews, and otherwiſe called gerah and keſhita.

AGUTI, in natural hiſtory, an American quadruped, greatly reſembling a guinea pig both in ſize and ſhape.

AGYNANI, in eccleſiaſtical hiſtory, a ſect of heretics that appeared in the ſeventh century. They condemned all carnal commerce with women, and pretended that God was not the author of marriage.

A-HEAD, in navigation, any diſtance before a ſhip, or comprehended on that point of the compaſs to which ſhe ſtems, or points her fore-part; as land a-head, i. e. land lying immediately in that part of the horizon to which the courſe or ſtem is directed.

AHOVAI, in botany, a genus of plants, with a funnel-ſhaped leaf. Its fruit, which, in ſome meaſure, reſembles a pair, contains a triangular kernel, and is poiſonous.

AID, in a general ſenſe, any kind of aſſiſtance given by one perſon to another.

AID, or AYDE, in law, denotes a petition made in court for calling in help from another perſon who has any intereſt in the lands, or other things conteſted.

AID-DE-CAMP, a military term, an officer employed to receive and carry the orders of a general.

AID-MAJOR, a French term for an adjutant. See ADJUTANT.

AID, in ancient cuſtoms, a ſubſidy paid by vaſſals to their lord on particular occaſions.

AIDS, in the manage, are the ſame with what ſome writers call cheriſhing, and uſed to avoid the neceſſity of corrections. The inner heel, inner rein, &c. are called inner aids; as the outer heel, outer rein, &c. are termed outer aids.

* AJAX, in fabulous hiſtory, king of Salamis, and ſon of Telamon, was, next to Achilles, the moſt valiant general among the Greeks. He fought with Hector, and gave the moſt ſignal proofs of his courage; but, tranſported with fury at the arms of Achilles being adjudged to Ulyſſes, he ruſhed furiouſly among a flock of ſheep, and imagining that he was ſacrificing the Greeks to his revenge, made a great ſlaughter; but perceiving his error he pierced himſelf with the ſword he had received from Hector.

*AJAX, in fabulous hiſtory, the ſon of Oileus, one of the principal generals at the ſiege of Troy; and, as his father had very extenſive dominions in the country of the Locrians, he himſelf fitted out forty ſhips for that expedition. Homer repreſents him as intrepid, ſwift, and expert at drawing the bow, but without judgment or conduct. After the taking of Troy, he raviſhed Caſſandra, the daughter of Priam, in the temple of Minerva, whither ſhe had fled for ſanctuary; on which that goddeſs puniſhed him, by raiſing a ſtorm in which he periſhed.

AIR, in philoſophy, is a light, fluid tranſparent ſubſtance, ſurrounding the earth to a very conſiderable height. The air is generally eſteemed a fluid, though it differs from the general nature of fluids, in three particulars: 1. In being compreſſible, a property unknown to any other fluid. 2. In being uncongealable, or fixed by any known method, as all other fluids may. 3. In being of a different denſity in every part, decreaſing from the earth's ſurface upwards; whereas other fluids are of an uniform denſity throughout. The air is therefore a fluid ſui generis, if it be properly any fluid at all. That the air was created at firſt with the earth itſelf, is not to be doubted; and that there has been ever ſince a conſtant generation of particles of air by the mutual action of bodies upon each other, as in fermentations, and all kinds of natural and artificial chemiſtry. That the air is a heavy or ponderous body, muſt follow from the nature of the particles of which it conſiſts; and ſince thoſe particles ariſe from bodies of every kind known in or upon the earth, the conſtituent parts of air muſt be of a very heterogeneous nature, and infinitely various in their ſpecific gravities: whence alſo it will follow, that as the matter which compoſes the body of air or atmoſphere, is always variable, its weight or gravity will be always different, as we conſtantly experience by the barometer. See BAROMETER.

This ſpring of the air muſt render its denſity always in different altitudes from the earth's ſurface; for the lower parts of the air, being preſſed by the weight of the ſuperior parts, will be made to accede nearer to each other, and the more ſo as the weight of the incumbent air is greater: and hence it follows, that the denſity of the air is greateſt at the earth's ſurface, and decreaſes upwards in geometrical proportion to the altitudes taken in arithmetical progreſſion. See ATMOSPHERE.

Since we find, by experience, that the gravity of the air is ſo various, that one time it will ſuſtain a pillar of mercury 31 inches high, when at another it will raiſe it but to the height of 28 inches, in the barometer ; it follows, that we may take $29\frac{1}{2}$ inches of mercury for the mean altitude, and conſequently its weight for the mean weight of a pillar of air the ſame baſe. But a column of mercury, whoſe baſe is one ſquare inch, and altitude $29\frac{1}{2}$, weighs about 15 lb. which is equal to the preſſure of air on every ſquare inch ; and therefore upon every ſquare foot it will be 2160 lb. and allowing $14\frac{1}{2}$ ſquare feet for the ſurface of the body of a middle ſized man, it muſt ſuſtain a preſſure of 31320 pounds, or 14 tons, when the air is of a mean gravity. This prodigious force would cruſh us into a very ſmall compaſs, were it not that it is equal on every part, and counterbalanced by the equal re-action of the ſpring of the air within us. The weight of the air is proved by a great variety of curious experiments, the principal of which here follow :

1. By actually weighing it in a nice balance, where we ſhall find that one gallon of air will very nearly weigh a dram. 2. By filling a glaſs tube with mercury, and inverting it in a baſon of the ſame fluid, where it will appear that a column will be ſupported in the tube by the ſole weight or preſſure of the air, to upwards the height of 28 inches. 3. By taking the air off from the ſurface of the quick ſilver in the gage of the air-pump, which then immediately riſes by the preſſure of the external air. 4. By exhauſting a receiver placed over the hole of the braſs plate on the air-pump, which will then be kept faſt on by the preſſure of the incumbent air. Or, 5. More demonſtratively, by exhauſting a ſmall receiver under one larger, and letting in the air at once upon it ; which will be then faſtened to the place as before, tho' not placed over the hole. 6. By placing the hand on the open receiver, and exhauſting the weight of the air on the hand will be extremely ſenſible. 7. By placing a plain piece of glaſs on the ſaid open receiver, which, when the air is a little exhauſted, will be broke into pieces by the weight of the air. A bladder tied over the ſame glaſs will be ſoon broken in ſame manner. The ſpring of the air may likewiſe be demonſtrated by various experiments : and it is owing to the preſſure and ſpring of this fluid conjointly, that inſpiration and expiration are performed.

Air is a principal cauſe of the vegetation of plants, an inſtance of which we have from Mr. Ray, in the Philoſophical Tranſactions, of lettuce-ſeed that was ſown in an exhauſted receiver. In eight days time there was no appearance of vegetation ; whereas ſome of the ſame ſeed that was ſown at the ſame time, in the open air, was riſen to the height of an inch and a half in that time ; but, the air being let into the exhauſted receiver the ſeed grew up to the height of two or three inches in the ſpace of one week. Air is capable of penetrating the porous and ſpongy parts of plants, and of being there contracted,and of dilating itſelf again The air operates alſo within the bowels of the earth, and by its ſubtility, perſpiring through the pores, aſſiſts in the rarefaction of the crudities of the earth, and in the diſpelling all ſuperfluous moiſture, entering into the very pores and veins of the trees, plants, herbs, &c. carrying along with it thoſe ſalts contained either in itſelf, or lodged in the earth ; which ſalts or juices are altered according to the figures or dimenſions of the different ſtrainers or veſſels of thoſe ſeveral plants that grow upon the ſame ſpot of earth, which is ſo impregnated with theſe ſalts : and thence thoſe varieties in taſte and ſmell proceed, notwithſtanding they all receive their nouriſhment from the ſame ſtock that is lodged in the earth. The air alſo affects the branches, leaves, and flowers of trees, plants, and herbs, entering and perſpiring through them, and even through the bark and body of trees ; and by the ſame kind of ſubtility, it does, by its refreſhing breezes, moderate the intenſeneſs of the ſun-beams, cooling, chearing, blowing, opening, and extending all the offſpring of nature. The air fixes and inſinuates its aereal ſubſtance into the liquid ſap of vegetables : and, as all the agitations in nature proceed from the contrariety of parts inhabiting together, ſo theſe aereal and liquid ſubſtances, being mixed, cauſe the agitation and motion in vegetables, or more properly, ſet it all into a ferment, whether it be in the roots or the ſtem ; and it riſes by co-operation of the ſun, which is the third agent in vegetation, up to the top of a tree, &c. as liquids riſe by fire to the top of the containing veſſel. The air we find produces a vibratory motion in ſeveral bodies, and, particularly in plants, the air-veſſels thereof perform the office of lungs : for the air contained in them, ſometimes contracting, and ſometimes expanding, according as the heat is increaſed or diminiſhed, preſſes the veſſels, and eaſes them again by turns ; and thus promotes a circulation of their juices, which could ſcarce be otherwiſe affected.

Air, ſays the learned Dr. Hales, is a fine elaſtic fluid, with particles of very different natures floating in it, whereby it is admirably fitted by the great Author of Nature, to be the breath or life of vegetables, as well as animals, without which they can no more live nor thrive than animals can. As a proof of the great quantities of air in vegetables, he refers to his third chapter of his excellent Treatiſe of Vegetable Statics, where, he ſays, in the experiments on vines, the great quantity of air was viſible, which was continually aſcending through the ſap in the tubes; which manifeſtly ſhews what plenty of it is taken in by vegetables, and is perſpired off with the ſap through the leaves. He adds ſeveral experiments, as to an apple-branch, apricot-branch, birch, and other plants, to prove the ſame thing. And Dr. Grew has obſerved, that the pores are ſo large in the trunks of ſome plants, as in the better ſort of thick walking canes, that they are viſible to a good eye without a glaſs; but, with a glaſs, the cane ſeems as if ſtuck at top full of holes, with great pins, ſo large as very well to reſemble the pores of the ſkin in the ends of the fingers, and ball of the hand. In the leaves of vines they likewiſe, through a glaſs, make a very elegant ſhew, ſtanding almoſt exactly in rank and file through the length of the leaves: whence it may be thought probable that the air freely enters plants, not only with the principal fund of nouriſhment by the roots, but alſo through the ſurface of their trunks and leaves, eſpecially at night, when they are changed from a perſpiring to a ſtrongly imbibing ſtate.

Air alſo helps to waft or diſperſe theſe foggy humid vapours which ariſe from the ſoil, and would otherwiſe ſtagnate and poiſon the whole face of the earth. The air, by the aſſiſtance of the ſun, aſſumes and ſublimates thoſe vapours into the upper regions; and thoſe foggy humid vapours are, by this ſublimation, and the coercive power of the air and ſun, rarified, and made again uſeful in vegetation. And, on the contrary, to the benign quality of the air, which is ſo many ways ſubſervient to vegetables, it is alſo ſometimes, and upon ſome accounts, injurious and pernicious to them; not only to the ligneous, herbaceous, and flowery parts above, but alſo to the roots and fibres below: for becauſe the air penetrates into the earth, it is eaſy to be concluded, that a dry, huſky, ſcorching air, may be very prejudicial to the tender fibres of new planted trees. It may be likewiſe ſuppoſed, that all bodies of earth are more or leſs capable of imbibing the fluid air, and of attracting ſuch ſalts as either can give, or the earth is capable of receiving.

The air can effect infinite mutations in ſubſtances, not only with regard to its mechanical properties, as gravity, denſity, &c. but alſo on account of the heterogeneous parts which enter into all ſubſtances: as, for example, where there is a great many, the air is impregnated with a biting vitriolic ſalt, which deſtroys every thing on the earth round about, and frequently appears on the ſurface of the ground in a kind of whitiſh efflореſcence. At Fohlun, in Sweden, a town famous for its copper mines, which have procured it the name of Copperburg, the mineral exhalations affect the air ſo ſenſibly, that the ſilver and copper money people carry in their pockets, changes colour by the means of it: and Mr. Boyle was informed, by a gentleman of property in thoſe parts, that from the veins of metals and minerals, frequent in that country, columns of a kind of ſmoke or ſteam frequently aroſe, ſome of which had a very bad ſcent, others none at all, and ſome an agreeable one. In Carniole and other places, where there are mines, the air is at ſome ſeaſons very unhealthy, from whence proceed ſeveral epidemical diſtempers. We ſhall add, that, about the Cape of Good Hope, the mines of arſenic, which are numerous in that neighbourhood, emit ſuch noxious vapours, that no animal can live, and they were therefore obliged to ſhut them up again, after having been opened for ſome time. Dr. Hales has lately contrived a machine, which he calls a ventulator, for evacuating foul air. See VENTULATOR.

AIR, in medicine, is one, and not the leaſt powerful, of the non-naturals; as upon it the very life of animals depends. It is ſuſceptible of different qualities; hot, moiſt, cold, dry, ſerene, pure, and temperate. It is ſubject to variations, more or leſs ſudden, and to be mixed with impure, corrupted, contagious, metallic, ſulphureous exhalations, which are all prejudicial to health. The beſt quality of the air is to be pure and ſweet, void of all bad exhalations, neither too hot, cold, dry, nor moiſt. The ſudden changes of the air are inevitable and dangerous; whence proceed a great number of diſeaſes, which reign in the ſpring and autumn, towards the approach of winter. Hoſpitals, camps, places where lead is melted, and the earth juſt thrown up, are generally unhealthy, on account of the bad exhalations. Lighted charcoal, in a cloſe place, fills the air with ſulphureous particles, which are unwholſome, and ſometimes kill the ſtrongeſt perſons. Too hot an air diſpoſes to malignant fevers; if it be without moiſture, it produces diary and putrid fevers. Agues are epidemic in the fens of Cambridgeſhire, the hundreds of Eſſex, and in ſome parts of Kent, on account of the vapours which weaken the fibres of the body, and obſtruct the pores of the ſkin; beſides, a cold and moiſt conſtitution of the air produces coughs, diſtillations, and rheumatic pains. Hectic and conſumptive people are in great danger, both in very hot and in very cold weather. When the paſſage through the pores of the ſkin is ſtopt by cold, the patient is either apt to fall into a looſeneſs, or to have his legs ſwelled, and the aſthmatic ſymptons increaſed.

AIR, in mythology, was worſhipped by the pagans under the names of Jupiter and Juno: the former repreſenting the ſuperior and finer part of the atmoſphere, and the latter the inferior and groſſer part.

AIR, in painting and ſculpture, the manner and very life of action; or, it is that which expreſſes the diſpoſition of the agent. See the article ACTION.

It is alſo uſed to ſignify the geſture or attitude of a figure.

AIR, in muſic, the melody proper for ſongs, odes, &c. being uſually quick and lively.

The term is ſometimes uſed to ſignify the ſongs themſelves, called by the Romans, *æra*, whence the word in this acceptation is derived.

AIRS, in the manage, ſignify the artificial motions of taught or managed horſes, ſuch as the demi-volt, curves, capriole, &c.

AIR-BLADDER, a veſicle found in the bodies of all fiſhes, except thoſe of the cartilaginous and cetaceous kinds. It is vulgarly called the ſwim, or ſwimming bladder. By the aſſiſtance of this bladder, which is always more or leſs replete with air, the fiſh is enabled to ſuſtain its body at any depth. When the fiſh is near the bottom, the great weight of the incumbent water compreſſes its body, or rather the incloſed air-bladder, till the whole fiſh becomes equiponderant with an equal bulk of water. In the middle of the fluid, where the preſſure is leſs, the air-bladder expands; thereby increaſes the bulk of the fiſh, without adding any thing to its weight, till it here alſo becomes equiponderant with an equal bulk of water: and in this manner the air-bladder expands, as the fiſh riſes near the ſurface, and by that means ſuſtains it at any depth. There is however no doubt but fiſhes have a power of expanding and compreſſing the air-bladder, excluſive of the weight of the water, and by that means of riſing or ſinking at pleaſure. Some fiſhes have only a ſingle air-bladder; ſome a double one; and in others it is triple, or divided into three cells. Fiſhes which lie grovelling at the bottom, have no air-bladders; and it is remarkable, that if the air-bladder be either pricked or burſt, in fiſhes naturally furniſhed with it, they immediately ſink to the bottom; from whence they can never riſe themſelves.

AIR-GUN, a pneumatic machine for exploding bullets, &c. with great violence.

The common air-gun is made of braſs, and has two barrels; the inſide barrel A (pl. II. *fig.* 1.) is of a ſmall bore, from whence the bullets are exploded; and a large barrel E C D R on the outſide of it. There is a ſyringe S M N P fixed in the ſtock of the gun, by which the air is injected into the cavity between the two barrels through the valve E P. The ball K. is put down into its place in the ſame barrel, with the rammer, as in another gun. At S L is another valve, which, being opened by the trigger O, permits the air to come behind the bullet, ſo as to drive it out with great force. If this valve be opened and ſhut ſuddenly, one charge of condenſed air may be ſufficient for ſeveral diſcharges of bullets; but if the whole air be diſcharged on one ſingle bullet, it will drive it out with a great force. This diſcharge is effected by means of a lock (*fig.* 3.) placed here as uſual in other guns; for the trigger being pulled, the cock will go down and drive the lever O (*fig.* 1.) which will open the valve, and let in the air upon the bullet K.

AIR-JACKET, a ſort of jacket made of leather, in which are ſeveral bags, or bladders, compoſed of the ſame materials, communicating with each other. Theſe are filled with air through a leather tube, having a braſs ſtop-cock accurately ground at the extremity, by which means the air blown in through the tube is confined in the bladders. The jacket muſt be wet, before the air be blown into the bags, as otherwiſe it will immediately eſcape through the pores of the leather. By the help of theſe bladders, which are placed near the breaſt, the perſon is ſupported in the water, without making the efforts uſed in ſwimming; and conſequently may ſave himſelf, if he has the misfortune of falling over-board, &c. See the article CORK-JACKET, where the reader will find a compariſon between theſe two inventions.

AIR-PUMP, a pneumatic machine, by which the air contained in a proper veſſel may be exhauſted. The inventor of this noble inſtrument was the celebrated Otto de Guerick, a burgomaſter of Magdeburg, who performed ſeveral experiments on it at Ratiſbon, before the emperor and ſeveral other perſons of diſtinction, in the year 1654. But this inſtrument was very defective, it requiring the labour of two ſtrong men, for above two hours, to exhauſt the air out of glaſs-veſſels, plunged under water. Some time after Mr. Boyle, with the aſſiſtance of Dr. Hook, contrived a new air-pump, more commodious and better adapted to experiments than that of the German author, and hence, the inſtrument was called Machina Boyleana.

Several ſorts of air-pumps have been from time to time conſtructed, and ſeveral improvements made in this uſeful machine at different times and by different perſons. The following, which is generally in uſe, was publiſhed by Mr. Hawkſbee, in the year 1709.

Deſcription of the common AIR-PUMP. This machine is repreſented on plate II. *fig.* 2. where A, A, are two braſs barrels, in which the piſtons C, C, move up and down by means of a cog wheel, which moves on the axis F, when the machine is put in motion by the winch B. G, G, are two pillars, or pieces of wood, ſupporting the frame of the pump-wheel; which is ſcrewed upon them by nuts under the little pieces of wood E, E. The braſs tube, or pipe, marked H, H, is called the ſwan-neck; by this the air paſſes from under the receiver O, O, through a ſmall hole K, in the middle of the braſs plate I, I, on the top of the pump to a braſs piece in the box D, D, which being perforated length-ways, to the middle point, under each barrel, tranſmits the air through a ſmall hole by a bladder valve, from the receiver to each barrel, to be pumped out by paſſing through the hole in the deſcending piſton. Theſe holes in the piſtons, and bottoms of the barrels, are covered with valves to prevent the return of the air into the receiver. The mercurial gauge, or common barometer, marked L, L, is immerſed in a baſon of mercury, fixed in the bottom of the frame, and at the top communicates with the receiver, and conſequently ſhews how much the receiver is exhauſted by the riſing of the mercury in the tube, by a graduated ſcale fixed to it. Under the frame, below K, is a ſtop-cock communicating with the receiver, by turning which the air will be re-admitted. The receiver is ground very true at the bottom, and fixed on the pump by means of wetted leathers, by which the air is effectually excluded.

Deſcription of Mr. Smeaton's AIR-PUMP. This ingenious gentleman has not only obliged the world with an air-pump, far preferable to any machine of that kind hitherto known; but alſo ſhewn the reaſons on which the imperfections of the common air-pump depend. The reader will therefore, we are perſuaded, be pleaſed to ſee Mr. Smeaton's obſervations in his own words.

" The principal cauſes of imperfection in the common pumps ariſe, firſt, from the difficulty in opening the valves at the bottom of the barrels; and, ſecondly, from the piſton's not fitting exactly, when put cloſe down to the bottom, which leaves a lodgment for air, that is not got out of the barrel, and proves of bad effect.

" In regard to the firſt of theſe cauſes, the valves of air-pumps are commonly made of a bit of thin bladder, ſtretched over a hole generally much leſs than one tenth of an inch diameter; and to prevent the air from re-paſſing between the bladder and the plate, upon which it is ſpread, the valve muſt always be kept moiſt with oil or water.

" It is well known, that at each ſtroke of the pump the air is more and more rarefied, in a certain progreſſion, which would be ſuch, that an equal proportion of the remainder would be taken away, was it not affected by the impediments I have mentioned: ſo that, when the ſpring of the air in the receiver becomes ſo weak, as not to be able to overcome the coheſion of the bladder to the plate, occaſioned by the fluid between them, the weight of the bladder, and the reſiſtance that it makes by being ſtretched, the rarefaction cannot be carried farther, tho' the pump ſhould ſtill continue to be worked.

" It is evident, the larger the hole is, over which the bladder is laid, a proportionably greater force is exerted upon it by the included air, in order to lift it up; but the aperture of the hole cannot be made very large, becauſe the preſſure of the incumbent air would either burſt the valve, or ſo far force it down into the cavity, as to prevent its lying flat and cloſe upon the plate, which is abſolutely neceſſary.

" To avoid theſe inconveniences as much as poſſible, inſtead of one hole, I have made uſe of ſeven, all of equal ſize and ſhape; one being in the center, and the

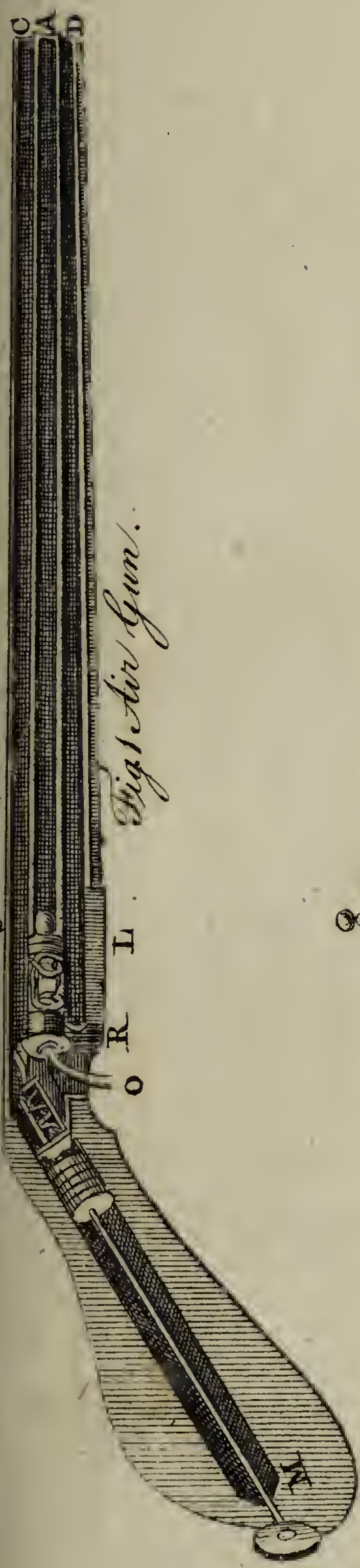


Fig.1 Air Gun.

Common Air Pump.

Fig.2.

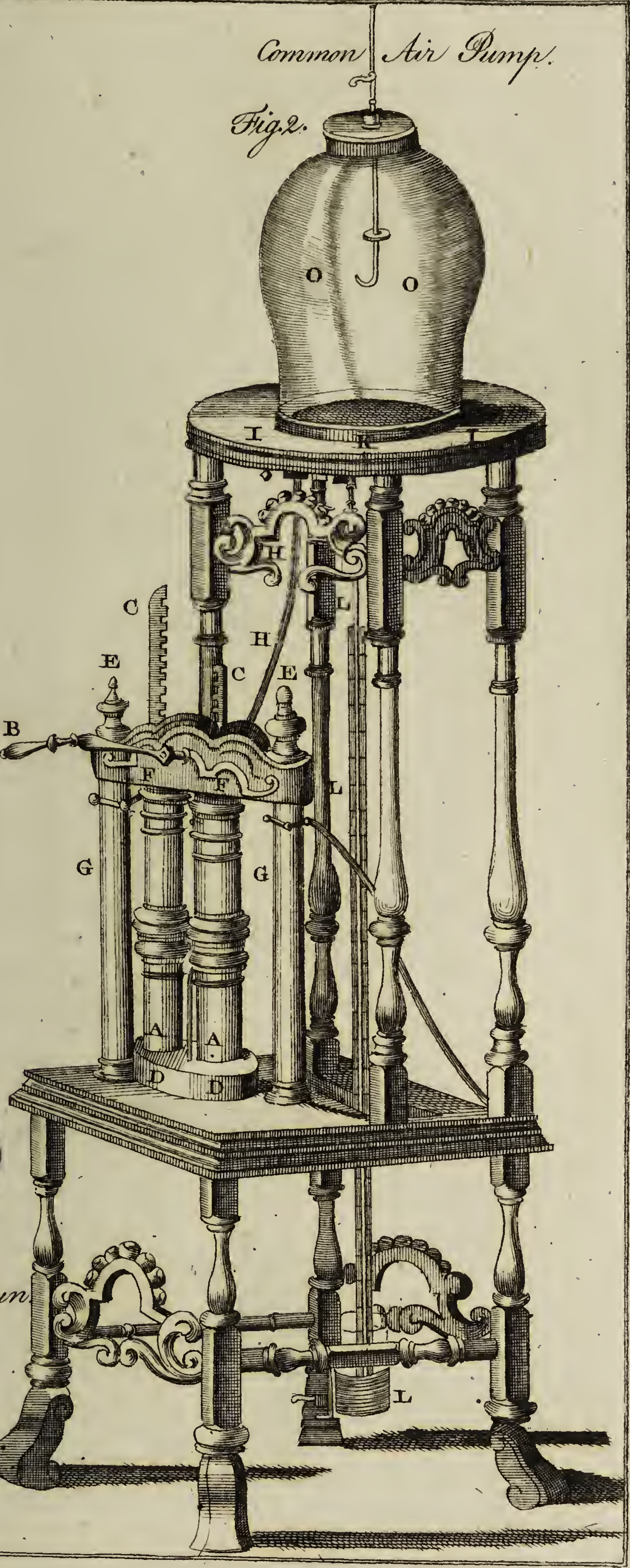


Fig.3. Air Gun.

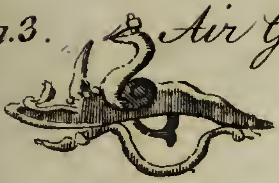


Plate III. Facing Air Pump.

Smeatons Air Pump.

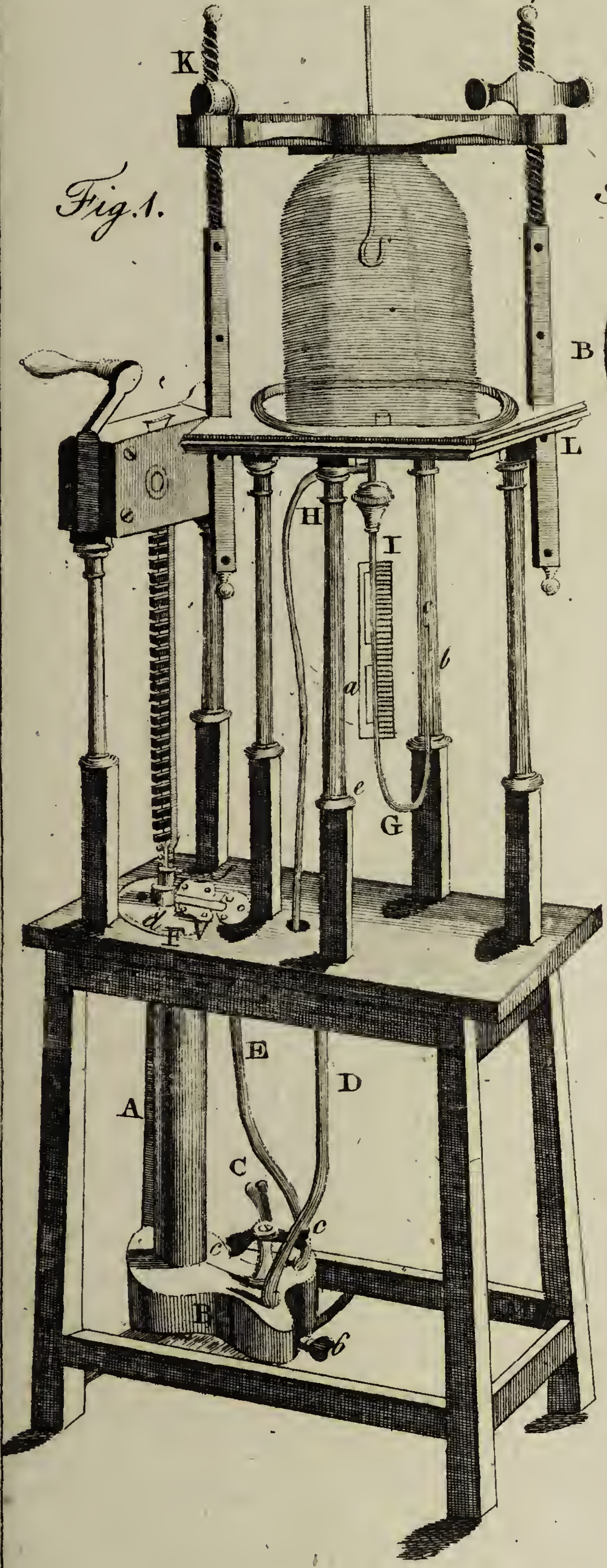


Fig. 1.

Smeatons Air Pump.

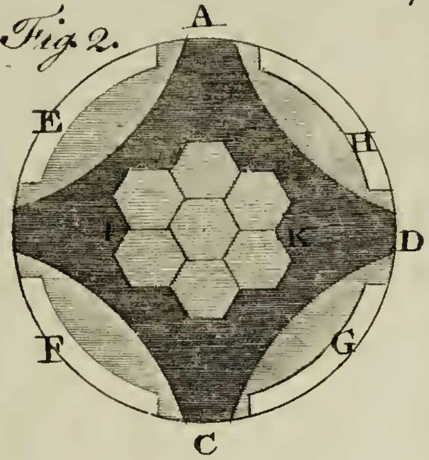


Fig. 2.

Air Pump.

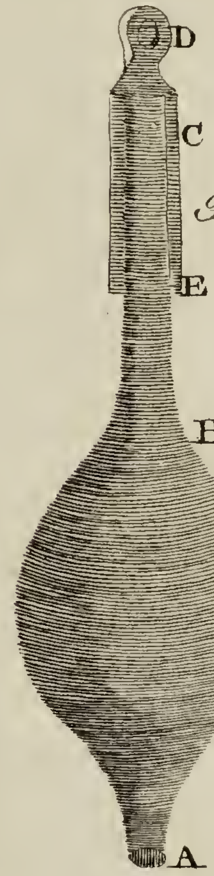


Fig. 3.

the other ſix round it : ſo that the valve is ſupported at proper diſtances by a kind of grating, made by the ſolid parts between theſe holes : and, to render the points of contact, between the bladder and grating, as few as poſſible, the holes are made hexagonal, and the partitions filed almoſt to an edge. As the whole preſſure of the atmoſphere can never be exerted from this valve, in the conſtruction made uſe of in this pump, and, as the bladder is faſtened in four places inſtead of two, I have made the breadth of the hexagons three tenths of an inch ; ſo that the ſurface of each of them is more than nine times greater than common. But as the circumference of each hole is more than three times greater than common, and as the force that holds down the valve, ariſing from coheſion, is, in the firſt moment of the air's exerting its force, proportionable to the circumference of the hole ; the valve over any of theſe holes will be raiſed with three times more eaſe than common : but as the raiſing the valve over the center-hole is aſſiſted on all ſides by thoſe placed round it, and as they altogether contribute as much to raiſe the bladder over the center-hole, as the air immediately acting under it, upon this account the valve will be raiſed with double the eaſe that we have before ſuppoſed, or with a ſixth part of the force commonly neceſſary.

" Plate III. *fig.* 1. is a perſpective view of the principal parts of the pump together. A is the barrel. B the ciſtern, in which are included the cock with ſeveral joints. Theſe are covered with water to keep them air-tight. A little cock to let the water out of the ciſtern, is marked 6. C *c c* is the triangular handle of the key of the cock ; which, by the marks on its arms, ſhews how it muſt be turned, that the pump may produce the effect deſired. D H is the pipe of communication between the cock and the receiver. E is the pipe that communicates between the cock and valve, on the upper plate of the barrel. F is the upper plate of the pump, which contains the collar of leathers *d*, and V the valve, which is covered by the piece *f*. G I is the ſiphon gauge, which ſcrews on and off, and is adapted to common purpoſes. It conſiſts of a glaſs tube hermetically ſealed at *c*, and furniſhed with quickſilver in each leg ; which, before the pump begins to work, lies level in the line *a b* ; the ſpace *b c* being filled with air of the common denſity. When the pump exhauſts, the air in *b c* expands, and the quickſilver in the oppoſite leg riſes, till it becomes a counter-balance to it. Its uſe is ſhewn upon the ſcale I *e*, by which the expanſion of the air in the receiver may nearly be judged of. When the pump condenſes the quickſilver riſes in the other leg, and the degree may be nearly judged of by the contraction of the air in *b c* : marks being placed at $\frac{1}{2}$ and $\frac{1}{3}$ of the length of *b c* from *c*, which ſhews when the receiver contains double or treble its common quantity.

" Fig. 2. is the plan of the principal valve. A, B, C, D, repreſents the bladder faſtened in four places, and ſtretched over the ſeven holes I, K, formed into an hexagonal grating, which I ſhall call the honey-comb. E, F, G, H, ſhews where the metal is a little protuberant, to hinder the piſton from ſtriking againſt the bladder.

" Fig. 3. repreſents the new gauge, which I call the pear gauge. It is open at A ; B, C, is the graduated tube, which is hermetically cloſed at C, as is ſuſpended by the piece of braſs D, E, that is hollowed into a cylinder, and claſps the tube."

Theory of the AIR-PUMP. The operations of this machine are accounted for by the elaſticity of the air : for when the piſton is thruſt down to the bottom of its barrel, and then raiſed up, it is evident that the air, which before was contained in the receiver, will now expand itſelf, and part of it will enter into the pump barrel : ſo that the air in the receiver and barrel will have the ſame denſity ; but this denſity is to the former as the capacity of the receiver and barrel in one ſum, is to the capacity of the receiver alone ; it being well known that the denſity of the air (in the ſame region) is inverſely as the ſpace occupied. See DENSITY.

AIR-SHAFTS, among miners, holes made from the open air to meet the adits, and ſupply them with freſh air. Theſe air-ſhafts, when the adits are thirty or forty fathoms in length, become abſolutely neceſſary, in order to let in freſh air, and give vent to the damps and noxious vapours.

AIR-THREADS, in natural hiſtory, long filaments, ſo frequently ſeen in autumn floating about in the air. Theſe are the work of ſpiders, eſpecially of that ſpecies called the long-legged field-ſpider ; which, having mounted to the ſummit of a buſh or tree, darts from its tail ſeveral of theſe threads, till one is produced capable of ſupporting the creature in the air ; on this it mounts in queſt of prey, and frequently riſes to a very conſiderable height. Nor does the ſpider that has thus raiſed itſelf deſcend always by the ſame thread; it often winds that up, and darts out another, more or leſs long, as it intends a higher or lower flight.

AIR-VESSELS, in plants, are certain veſſels or ducts for imbibing or conveying air to the ſeveral parts of the plant.

AIRING, in horſemanſhip, the exerciſing a horſe in the open air; a practice that cannot be too much commended.

AIRY, or AERY, among ſportſmen, the neſt of a hawk or eagle.

AIUS LOCUTIUS, the name of a deity to whom the Romans erected an altar.

AJUTAGE, or ADJUTAGE, in hydraulics, a ſmall pipe fitted to the aperture of a jet-d'eau, or fountain. Experiments have ſhewn, that a reſervoir of 12 feet height above the orifice of an ajutage of three lines diameter, delivers fourteen Paris pints of water in a minute. This may ſerve as a fundamental rule for fountains, aſſiſted by the following principles. When the height of the reſervoirs is the ſame, and the orifices of the ajutages different, the expence of water is proportional to the ſquares of the diamerers of the ajutages, whence the expence of water, through different ajutages, is thus computed. If 9, the ſquare of 3, gives, by experiment, 14 pints, what will an ajutage of 5 or 6 lines give. The anſwer is, 39 pints for 5, and 56 pints for 6.

If the expence of two reſervoirs, of unequal heights, and different ajutages, be required, proceed by the following rule. The expence of water of two reſervoirs, whoſe heights are different and alſo their ajutages, are in the compound ratio of the ſquares of the diameters of the ajutages, and of the ſubduplicate ratio of the heights. Water ſpouting upwards, through an ajutage, would aſcend to the ſame height as that of its upper ſurface in the reſervoir, were it not for the reſiſtance of the air, the friction at the ſides of the adjutage, and ſome little impediments at the motion of the water in itſelf; on account of all which, this height of the riſe is always defective. It is found, by experience, that if the direction of the ajutage be a ſmall matter inclined, the water will riſe higher than if it be truly upright; and that a poliſhed round hole, in a thin plate of metal, at the top of the pipe, by way of ajutage, will ſuffer the water to ſpout higher than when it is cylindrical or conical.

Experience alſo ſhews, that the bigneſs of the pipe of the ajutage ſhould be enlarged at and near the ſurface of the water in the reſervoir, and that ſuch pipe ſhould be much larger than the ajutage: alſo that there is a certain length among the ſeveral diameters of the ajutages, which will give the ſpout the greateſt height poſſible, and which muſt not exceed an inch and a quarter. Likewiſe, the height of the ſpout muſt have its limits, an hundred feet being almoſt as much as it will bear.

Let it be obſerved, 1. That the ſquares of the quantities flowing out from the ſame ajutage in equal times, are in the ratio of the heights of the liquid above the aperture.

2. The times in which cylindrical veſſels of the ſame diameter and height are emptied, the liquid flowing from unequal apertures, are in the inverſe ratio of the areas of thoſe apertures.

3. Cylindrical veſſels of unequal baſes, but of equal heights, are emptied through equal apertures in times that are in the ratio of their baſes.

4. The times in which any cylindrical veſſels are evacuated, are in a ratio compounded of the baſes, the inverſe ratio of the apertures, and direct ratio of the ſquare roots of the heights.

If the ſide of a cylindrical veſſel, beginning from the baſe be divided into lengths, which are as 1, 4, 9, 16, &c. *viz.* the ſquares of the natural numbers, 1, 2, 3, 4, &c. the ſurface of the water (running out through an hole or aperture at the bottom) will deſcend from each of thoſe diviſions to the next, in the ſame time.

In the above inveſtigations, we always ſuppoſe the velocity of the effluent water to remain conſtant during the evacuation; and therefore, when we ſpeak of the time of emptying a cylindrical veſſel, we only mean that time in which (the veſſel being kept conſtantly full) a quantity of the liquid, equal in magnitude to the capacity of the veſſel, will flow through the ajutage, or aperture, in the ſide of the perpendicular cylinder.

AJUTANT, in military affairs. See Adjutant.

AIX LA CHAPELLE, a very fine city of Germany, in the circle of Weſtphalia, and duchy of Juliers. It is ſo called, on account of a chapel built by Charlemagne in honour of the Holy Virgin. He having repaired, beautified, and enlarged the city, that was deſtroyed by the Huns, in the reign of Attila, in 451, he made it the moſt common place of his reſidence. There being a great number of reliques in the church of Notre Dame, it is greatly frequented by pilgrims on that account. Although the town is ſeated in a valley ſurrounded with mountains and woods, yet the air is very wholeſome. It may be divided into the inward and outward city : the inward is encompaſſed with a wall about three-quarters of a league in circumference, having ten gates ; and the outward wall is about a league and a half in circumference, in which there are eleven gates. There are rivulets, which run through the town and keep it very clean, turning ſeveral mills ; beſides twenty public fountains, and many private ones. There are likewiſe thirty parochial or collegiate churches. The ſtadt-houſe is adorned with the ſtatues of all the emperors ſince Charlemagne. This fabric has three ſtories, the upper of which is one entire room, of one hundred and ſixty-two feet in length, and ſixty in breadth. In this, the new-elected emperor formerly entertained all the electors of the empire. It is a free imperial city, and changes its magiſtracy every year on the eve of St. John Baptiſt. The mayor is in the nomination of the elector palatine, in the quality of the duke of Juliers, as protector of the city. This place is famous for ſeveral councils and treaties of peace concluded here, particularly thoſe between France and Spain in 1668, and between Great-Britain and France in 1748. The baths have been frequented for ſeveral centuries, of which ſome are hot and ſome warm ; the principal are called the Emperor's Bath, the Bath of St. Cornille, the Bath of Roſes, the Bath of St. Quirin, the Little Bath, and the Bath of the Poor, beſides ſeveral others. There are two ſprings in the lower part of the city, over one of which there is the ſtatue of the Virgin Mary, and over the other that of Charlemagne. Theſe are for drinking ; and there are two pumps to raiſe up the water. There are ſeveral galleries or piazzas, under which they walk during the time of drinking, to make them paſs more freely. It is about an hundred years ſince theſe waters were firſt taken inwardly, which was owing to a French phyſician, who wrote a treatiſe on the virtues of theſe waters.

About a quarter of a league from Aix, ſtands the abbey of Borzet, which is a very magnificent pile of building. It was formerly a monaſtery, but ſerves for a nunnery, whoſe abbeſs is a princeſs of the empire, and lady of Borzet. The baths here are much hotter than at Aix la Chapelle ; and ſome of them are ſo hot, that they will boil eggs, and if you throw in a dog, he will be killed in an inſtant. Therefore, here, as well as at Aix, the water muſt ſtand till it is of a proper coolneſs. You may bathe here at fourteen different houſes ; and there is likewiſe one open bath, where the poor may bathe gratis. Near this place are ſeveral mines of lead, coal, vitriol, and lapis calaminaris. The time of drinking the waters, in the firſt ſeaſon, is from the beginning of May to the middle of June ; and, in the latter ſeaſon, from the middle of Auguſt to the latter end of September. They are ſaid to be efficacious in almoſt all tedious-chronic diſeaſes, whether internal or of the ſkin, particularly in all diſorders of the nerves; or in all cold diſeaſes, and inward decays.

It is thirty-ſix miles from Liege, and thirty-two from Cologne. Long. 5. 48. E. Lat. 51. 55. N.

AKAKIA (Martin) profeſſor of phyſic in the univerſity of Paris, was born at Chalons, in Champagne. He was named Sans Malice, i. e. Without Malice ; but, according to the cuſtom of that age, he changed it to Akakia, a Greek word of the ſame meaning. He publiſhed a Latin tranſlation of two books of Galen, *De Ratione Curandi*, i. e. Of the method of curing, and illuſtrated it with a commentary : he alſo tranſlated Galen's *Ars Medica*. He died in 1551.

AKAKIA (Martin) a Pariſian, ſon to the former, and ſecond phyſician to Henry III. He wrote a Treatiſe *de Moribus Mulieribus*, and *Conſilia Medica*, which were not publiſhed till after his death, which happened in 1588.

AKIBA, a famous rabbin, flouriſhed a little after the deſtruction of Jeruſalem by Titus. He kept the flocks of a rich citizen of Jeruſalem till the fortieth year of his age, and then applied himſelf to ſtudy in the academies for twenty-four years, and was afterwards one of the greateſt maſters in Iſrael, he having twenty-four thouſand ſcholars. He declared for the impoſtor Barcochebas, whom he owned for the Meſſiah, and not only anointed him king, but took upon himſelf the office of his maſter of the horſe ; but the troops ſent by the emperor Adrian having exterminated this faction, Akiba was taken, and after having his fleſh torn and mangled with iron combs, was burnt to death with a ſlow fire.

AKISSAT, the ancient Thyatira, a city, in Natolia, in Aſia, ſituated in a plain eighteen miles broad, that produces plenty of cotton and grain. The inhabitants,

bitants, who are reckoned to be about five thouſand, are ſaid to be all Mahommedans, and not one Chriſtian among them, except a few ſlaves. The houſes are built of nothing but earth or turf dried in the ſun, and very low and ill contrived. There are ſix or ſeven moſques, which are all of marble. They are in no want of water, for there are brooks which run through ſeveral of the ſtreets; and the city is well furniſhed with common proviſions. There are remarkable inſcriptions on marble in ſeveral parts of the town, which are part of the ruins of ancient Thyatira. It is ſeated on the river Hermes, fifty miles from Pergamos, Long. 28. 30. E. Lat. 38. 50. N.

ALABASTER (William) an Engliſh divine, born at Hadley, in the county of Suffolk. He was one of the doctors in Trinty-college, in Cambridge, but turned to the Roman communion; however, being ſoon diſſatisfied with his new religion, he again became a Proteſtant, and obtained a prebend in the cathedral of St. Paul, and after that, the rectory of Therfield, in Hertfordſhire. He was well ſkilled in the Hebrew tongue, and was ſtrangely infatuated with the Caballa. He gave a proof of his fondneſs for myſtical interpretations in the ſermon he preached at his taking the degree of doctor of divinity, when he took for his text the words "Adam, Seth, Enos," and endeavoured to prove that each of theſe words contained a hidden myſtery. He wrote a Latin tragedy, intitled Roxana, which, when it was acted, in a college at Cambridge, was attended with a remarkable circumſtance; for a lady was ſo terrified at the laſt words, *Sequar, ſequar*, which were pronounced in a very ſhocking tone, that, it is ſaid, ſhe loſt her ſenſes, and never again recovered them. He wrote a Hebrew Lexicon in folio, and ſeveral other works. He was living in 1630.

ALABASTER, *Alabaſtrites*, in natural hiſtory, the name of a genus of foſſils, nearly allied to marble. It is an elegant ſtone of great brightneſs, and will receive a fine poliſh, but is brittle. Naturaliſts enumerate ſeveral ſpecies of alabaſter; as, the ſnow-white ſhining albaſter. Boet informs us, that this ſtone is extremely white, and found in Taurus in pieces only large enough to make diſhes and the like; but it was formerly brought from Arabia. It is not very compact, but heavy, and conſiſts of a multitude of broad flat large particles, which are very bright and perfectly white. It cuts very freely, and is capable of a fine poliſh. There are very large ſtrata of it in Arabia, Egypt, and many parts of Italy.

Whitiſh yellow alabaſter is of a ſoft conſiſtence, and called, by Boet, the phengites of Pliny, who affirms it was found in Capadocia. It is of a looſe open texture, conſiderably heavy, and nearly of the colour of honey; but the colour is more deep in ſome places than others. It conſiſts of irregular pieces lying in tables one over another, though with regularity, and altogether compoſe a remarkable bright and very brittle maſs. Beſides the places above-mentioned, it has been found in Germany, France, and Derbyſhire.

Yellow and reddiſh variegated alabaſter is the common alabaſter of the ancients. It is ſo ſoft that it may be cut with a knife; and has the ſame name in all languages. It is remarkably bright, glittering, and almoſt tranſparent; and its texture very looſe and open, though it is moderatery heavy. The ground is of a clear pale yellow, between that of honey and amber, and has the ſame with crooked undulated veins, ſome of which are broad, and others narrow; ſome of a pale red, others whitiſh, and others again of a very agreeable pale brown. It will bear a very fine poliſh, and conſiſts of large angular ſparry concretions. It was formerly found only in Egypt, but is now met with in many parts of England. *Brooke's Natural Hiſt.*

ALÆ, in anatomy, is ſometimes uſed for the lobes of the liver, the nymphæ of the female pudendum, the two cartilages which form the noſtril, the arm-pits, &c.

ALADULIA, a conſiderable province of Turky in Aſia, in that part called Natolia, between the mountains of Antitaurus, which ſeparates it from Amaſia on the north, and from Carimania on the weſt. It has the Mediterranean Sea on the ſouth; and the Euphrates, or Frat, on the eaſt, divides it from Diarbeker. It comprehends the Leſſer Armenia of the ancients and the eaſt part of Cilicia. Formerly it had kings of its own; but the head of the laſt king was cut off by Selim I. emperor of the Turks, who had conquered the country. It is now divided into two parts: the north, comprehended between Taurus, Antitaurus, and the Euphrates; is a beglerbeglic, which bears the name of Maraſh, the capital town: and the ſouth, ſeated between mount Taurus and the Mediterranean, is united to the beglerbeglic of Aleppo. The country is rough, ragged, and mountainous; and yet there are good paſtures, and plenty of horſes and camels. The people are hardy and thieviſh. The capital is Malatigah.

ALAGNON, one of the principal rivers in the government of Auvergne, in France, which riſes at Cantal, and is very rapid; it runs into the Allier.

ALAIS, a town in Languedoc, ſeated on the river Gardon, is a pretty large, populous, trading city, and has ſeven gates. Its cathedral is but mean, though it has a portico in the Gothic taſte, on which the ſteeple is raiſed, and underneath it is the principal gate of the church. The Jeſuits had a college in this place; and a fort was built here in 1689.

ALAMODE, in commerce, a very thin, gloſſy, black ſilk, chiefly uſed for women's hoods and men's mourning ſcarfs.

ALARM, in military affairs the apprehenſion of being ſuddenly attacked, or the notice of ſuch an attack, ſignified by the firing of a cannon, muſket or the like. Falſe alarms are frequently made uſe of to harraſs the enemy, by keeping them continually under arms.

ALARM-BELL, the bell rung upon any ſudden emergency, as a fire, mutiny, approach of an enemy, &c.

ALARM-POST, the place appointed for drawing up a regiment in caſe of an alarm.

ALARM, a kind of clock, contrived for waking people at a certain hour, by making an uncommon noiſe, &c.

ALATERNUS, in botany, the name of a diſtinct genus of plants, according to Tournefort's ſyſtem; but comprehended by Linnæus among the rhamnuſes.

ALB, or ALBE, in the Roman church, a veſtment of white linen, hanging down to the feet, and anſwering to the ſurplice of our clergy. It was cuſtomary in the ancient church for thoſe newly baptized to wear the alb, or white veſtment; and hence the Sunday after Eaſter was called *Dominica in Albis*, on account of the albs worn by thoſe who had been baptized on Eaſter-day.

ALB, the name of a Turkiſh coin, otherwiſe called aſper.

ALBANENSES, Chriſtian heretics in the reign of the emperor Conſtantine VI. and the pontificate of Leo III. about the year 796.

ALBE, a ſmall piece of money, current in Germany, worth about three halfpence.

ALBERTUS, a gold coin of the value of about fourteen ſhillings; it was coined during the adminiſtration of Albertus, archduke of Auſtria.

ALBIGENSES, a ſect of reformers, about Toulouſe and Albigeois, in Languedoc, who ſprung up in the 12th century, and diſtinguiſhed themſelves by their oppoſition to the diſcipline and ceremonies of the church of Rome. They were likewiſe called Waldenſes.

ALBION, the ancient name of Britain. See BRITAIN.

ALBITROSSE, a bird, very common in ſeveral parts of the Weſt-Indies; but not reduced to any certain genus.

ALBORAK, among Mahometan writers, the beaſt on which Mahomet rode in his journey to heaven.

ALBUGINEA *Tunica*, in anatomy, the third or innermoſt coat of the teſticles, ſo called from its white colour.

ALBUGO, among phyſicians, a diſtemper of the eye, cauſed by a white, denſe, and opaque ſpot, growing on the tunica cornea. This is a diſeaſe, which is more or leſs offenſive to the ſight, according to the greater or leſs portion of the tranſparent part of the cornea affected by it: for ſometimes it fixes on the exterior ſurface only of this membrane, ſometimes on the interior, and ſometimes it runs more or leſs deep into it. It is generally the conſequence of inflammations, by the extravaſation of humours between the membranes of this tunicle, and particularly in the ſmall-pox, by the ſuppuration of puſtules upon this part.

The learned Dr. Mead, ſays, I have made uſe of two methods of cure for this diſorder of the ſight; the one in the outward ſort, the other in the inward. In the former caſe I ordered the following powder.

“Take of common glaſs any quantity; pound it in a mortar, into a very fine powder; then add an equal quantity of white ſugar-candy, and levigate the mixture on a marble with great labour, till it becomes quite impalpable. A little of this powder, put into the eye with a quill every day, gradually abſterges and wears off the ſpot by its inciding quality. The other method above-mentioned of removing this ſpeck is, to order a dexterous ſurgeon to pare it cautiouſly every day with a knife; for this tunicle is compoſed of ſeveral lamellæ one over another, and has thickneſs enough to bear paring off ſome of its parts. I have ſeen ſeveral inſtances of cures by the eye-powder, but the paring of the coat has not ſucceeded with me above once or twice. However, it is better to try a doubtful remedy than none.” *Mead's Monita & Præcepta.*

The French ſurgeons ſcarify the eye for this diſeaſe with the briſtles or beards of rye-graſs; that is, about twenty or twenty-five of them tied together, like a little bruſh or pencil; and with this they bruſh the eyes ſometimes till a little blood comes, repeating the ſame every other or third day, four or five times, or more. After the operation, they waſh the eye very often with warm water, and at night apply the pulp of a roaſted apple.

ALBUM, in antiquity, a kind of table or regiſter, wherein the names of certain magiſtrates, public tranſactions, &c., were entered.

ALCAICS, in ancient poetry, a denomination given to ſeveral kinds of verſe, from Alcæus their inventor.

ALCAID, ALCAYDE, or ALCALDE, among the Spaniards and Portugueſe, a magiſtrate, or officer of juſtice, ſomething like our juſtice of peace. The alcaid is properly a Mooriſh officer, where he is inveſted with ſupreme juriſdiction, both in civil and criminal caſes.

ALCALI, or ALKALI, a general appellation given by phyſicians and chemiſts to all ſubſtances, which, on being mixed with acids, excite an efferveſcence. The word originally ſignified the ſalt extracted from the aſhes of *kali*, or glaſswort: but was afterwards applied to all ſalts that efferveſced with acids. Alcalies are generally divided into two kinds, and diſtinguiſhed by the epithets of *fixed* and *volatile*.

Fixed ALKALIES ſays *Newman*, are diſtinguiſhed from ſaline ſubſtances not alcaline, by their efferveſcing with all acids, forming with them neutral ſalts, precipitating ſolutions made in acids, and changing ſyrup of violets green. They are diſtinguiſhed from volatile alcalies by their fixity and fuſibility in the fire, by their deliquiating in the air, and never aſſuming a cryſtalline form, changing ſolution of mercury ſublimate not white, but of an oragne yellow, producing no blue colour with copper or its ſolutions, raiſing no viſible cloud when placed near an unſtopt bottle of ſpirit of nitre, occaſioning no coldneſs but rather heat on being diſſolved in water. Pure fixed alcalies, diſſolved in water, mingle with a ſolution of any other pure alcali, without the leaſt precipitation, turbidneſs, or ſenſible change. Fixed alcalies diſſolve ſulphur, oils, fats, and reſinous bodies. By quick-lime their activity is increaſed, and in this ſtate they diſſolve ſome metallic ſubſtances, as calces or filings of lead, fine filings of copper, copper precipitated from vitriol, the copper in verdigris, tin, and regulus of antimony: this laſt they corrode into a calx, which, by force of fire, may be melted into an amber-coloured glaſs. There are two ways of obtaining ſolutions of iron in theſe ſalts: one, by dropping a ſolution of the metal made in aqua-fortis into a ſtrong alcaline ley, the acid will be abſorbed and neutralized by a part of the alcali, and the iron remains diſſolved by the reſt: the other is, by deflagrating iron filings with nitre, the acid of the nitre will be diſſipated in the deflagration, and great part of the iron will diſſolve in water along with the remaining alcali. Theſe ſalts, combined with ſulphur, diſſolve almoſt all the metals and ſemi-metals, gold itſelf not excepted. When made fluid by a ſtrong fire, they diſſolve flint, ſand, and other earthy bodies, and on cooling concrete with them into a maſs, which proves diſſoluble in water, or an indiſſoluble glaſs, according as the proportion of the earth is large or ſmall. Added to phlegmatic ſpirits, either of the inflammable or volatile urinous kind, they imbibe the redundant phlegm, and thus render the ſpirit more concentrated. In pure vinous ſpirits they do not diſſolve, or only in very ſmall quantity, ſufficient however to give a ſenſible acrimony or alkaline impregnation to the ſpirit. If both the ſpirit and the ſalt are pure, the liquor receives no colour; but if any oily or reſinous matter be previouſly diſſolved in the ſpirit, or if the ſalt be impregnated, though ſlightly, with inflammable matter of any kind, a conſiderably deep tincture will be produced. Fixed alkalies, in general, heighten the colour of vegetable and animal tinctures, whether drawn with water or with ſpirit; but they commonly vary the taſte and often debaſe the ſmell of the preparation. They form, with acids, different neutral ſalts, according to the nature of the acid employed; with the vitriolic, a bitteriſh ſalt, very difficult of ſolution in water, and not fuſible in the fire, commonly called vitriolated tartar, the alkaline ſalt made from tartar being that which has chiefly been employed for theſe purpoſes; with the nitrous acid, they form a perfect nitre; with the marine, a ſalt greatly reſembling ſea-ſalt, being in ſome reſpects different from the common vegetable alkalies. They readily cryſtallize with any of the mineral acids, and with tartar; with which laſt they compoſe a neutral ſalt, much eaſier of ſolution than the tartar itſelf, and hence called ſoluble tartar. They do not eaſily cryſtallize with the acid of vinegar or lemon juice; theſe mixtures, if by careful management reduced to a cryſtalline form, ſoon deliquiate again in the air. There are different ways, beſides immediate mixture, of obtaining combinations of fixed alkalies with acids, depending upon their great affinities with one another. Thus, when any metallic body is diſſolved in an acid, the addition of an alkaline ſalt precipitates the metal; if the remaining liquor be filtered and evaporated, it leaves a neutral ſalt, compoſed ſolely of the acid and the alkali. Some of the metals ſuffer a notable alteration in this proceſs: thus the calx of iron, precipitated from the vitriolic acid in making vitriolated tartar, is ſcarce at all revivable into malleable iron again. When acids are combined with volatile alkalies into ammoniacal ſalts, and this compound mixed with a fixed alkali, on expoſing the mixture to the action of a moderate fire, in a retort or other convenient veſſel, the volatile alkali ariſes and the acid remains combined with the fixed; if it was not for the intervention of the fixed alkali, it would ſublime in conjunction with the volatile. In like manner, when ſulphur, or oils, or reſins, are diſſolved by a fixed alkali, the addition of any acid will ſeparate the ſubſtance before diſſolved, the acid and the alkali uniting together; and even when both of them are previouſly ſaturated, the alkali, for inſtance, with ſulphur, and the acid with metal, on mixing the two ſolutions together, both the ſulphur and the metal fall, leaving only the alkali and the acid combined in the liquor. When the alkali is previouſly combined with one acid, the addition of a more powerful acid will break the union, and diſengage the alkali from the firſt acid. On the neutral ſalt, compoſed of fixed alkali and vinegar, pour ſome ſpirit of common ſalt; the acetous acid will inſtantly begin to exhale, and, on applying a moderate heat, will be totally diſſipated, leaving the alkali combined with the marine acid. Add to this combination a due proportion of the nitrous acid, and the marine will be expelled, and a perfect nitre remain. The vitriolic, in like manner, expels the nitrous, and takes poſſeſſion of the alkali in its place: this being the moſt powerful acid, is not to be diſlodged by any other. When this acid is combined with inflammable matter into ſulphur, it loſes its great affinity to alkalies. If the neutral ſalt, compoſed of the vitriolic acid and fixed alkali, be melted with powdered charcoal, the reſult is a mixture of alkali and ſulphur. On diſſolving this compound in water, the ſlighteſt even of the vegetable acids precipitates the ſulphur, and unites the alkali. *Neumann's Chemiſtry*.

Preparation of fixed ALCALIES. The moſt commodious method of preparing fixed alkaline ſalts in the large way, ſeems to be that directed by Kunckel in his Art of Glaſs. The aſhes of wood, or the woody parts of vegetables, either burnt on purpoſe or as common fuel, are to be put into a large tub or vat, whoſe bottom is covered with pieces of ſplit wood and ſtraw, to prevent the aſhes from ſtopping up the cock. So much water is to be poured on the aſhes as may totally cover them: after ſtanding for a night, the liquor impregnated with their ſaline part, is to be let off by the cock at the bottom into another veſſel; and the elixation repeated with freſh water ſo long as the ley has any ſaline taſte. The elixated aſhes may be uſed like common wood aſhes, for manure; and the weak leys may be rendered ſtronger, by pouring them, inſtead of plain water, upon a freſh quantity of aſhes. Thus from every parcel of aſhes we obtain a ſtrong ley, with a weaker one to be returned on the next. Where the ley is to be kept in its liquid ſtate, wooden veſſels (according to him) are more commodious than earthen ones, however glazed; theſe laſt being ſooner corroded and penetrated by the acrid liquor. In procuring a ſolid ſalt, the ley is to be evaporated in an iron pan, fixed in brickwork; freſh ley being continually ſupplied during the evaporation, in a very ſlender ſtream, from a caſk placed on the brickwork, till the quantity of ſalt is as large as can be conveniently dried in the veſſel. This impure brown or blackiſh ſalt is to be calcined, in a furnace built for that uſe, with a red heat juſt not ſtrong enough to melt it, and every now and then turned up and ſtirred for ſix or ſeven hours, or till ſome of the larger pieces, taken out and broke, appear internally white. Thus we obtain an alkali ſufficiently pure for all the buſineſſes in which theſe kinds of ſalts are employed: if, for particular purpoſes, a further purification ſhould be required, it may be diſſolved, inſpiſſated, and calcined afreſh. The rough ſalt loſes, in the firſt calcinations, commonly about one tenth of its weight. Some ſoak in the ley a quantity of ſtraw, bean-ſtalks, or other like ſubſtances, ſufficient to imbibe it; and, by driving and burning theſe, obtain the ſalt of the ley, without the trouble of boiling it down. The earthy matter left by the ſtraw is, in quantity, inconſiderable, and for many purpoſes, of no injury to the ſalt, particularly for ſoap-boiling, bleaching, &c. where the ſalt is diſſolved, and conſequently purified from indiſſoluble earthy admixtures before it is uſed.

There is nevertheleſs one great inconvenience in the proceſs ; the ſtraw, when loaded with the alkali, being very difficultly made to burn. Vegetable ſubſtance in general, when fully impregnated with fixed alkaline ſalts, never flame ; and do not burn at all without a continuance of external heat, inſomuch that ſome have propoſed the impregnating of wood for buildings with ſalts, as an effectual means for preventing its receiving or communicating fire. The ſtrength of leys, or the quantity of ſalt diſſolved in them, may be eſtimated by the weight of a certain meaſure of them, compared to the weight of an equal meaſure of water ; or more commodiouſly, and perhaps as accurately, by means of an hydrometer graduated from actual trials with leys of known ſtrength. *Neumann's Chemiſtry.*

Volatile ALCALIES, are ſalts, formed by a new combination of the conſtituting particles of a natural body, by the operation of putrefaction. Volatile alkalies from whatever ſubſtance obtained, are all alike, and have the ſame properties ; differing only according to their degrees of purity. The volatile alkali, as well as the fixed, conſiſts of a certain quantity of acid, combined with and entangled by a portion of the earth of the mixed body from which it was obtained ; and on that account it has many properties like thoſe of a fixed alkali. But there is, moreover, in its compoſition, a conſiderable quantity of a fat or oily matter, of which there is none in a fixed alkali ; and, by this means, there is a great difference between them. Thus the volatility of the alkali produced by putrefaction, which is the principal difference between it and the other kind of alkali, whoſe nature it is to be fixed, muſt be attributed to the portion of oil which it contains ; for there is a certain method of volatilizing fixed alkalies, by means of a fatty ſubſtance. Volatile alkalies have a great affinity with acids; unite therewith rapidly and with ebullition, and form with them neutral ſalts, which ſhoot into cryſtals, but differ from one another according to the kind of acid employed in the combination. The neutral ſalts which have a volatile alkali for their baſis are in general called ammoniacal ſalts. That whoſe acid is the acid of ſea-ſalt, is called ſal ammoniac. As this was the firſt known, it gave name to all the reſt. Great quantities of this ſalt are made in Egypt, and thence brought to us. They ſublime it from the ſoot of cows-dung, which is the fewel of that country, and contains ſea-ſalt, together with a volatile alkali, or at leaſt the materials proper for forming it ; and conſequently all the ingredients that enter into the compoſition of ſal ammoniac. See the Memoirs of the Academy of Sciences. The neutral ſalts formed by combining the acids of nitre and of vitriol with a volatile alkali are called, after their acids, nitrous ſal ammoniac and vitriolic ſal ammoniac : the latter, from its inventor, is called Glauber's ſecret ſal ammoniac.

A volatile alkali, then, has the ſame property as a fixed alkali, with regard to acids ; yet they differ in this, that the affinity of the former, with acids, is weaker than that of the latter : and hence it follows, that any ſal ammoniac may be decompounded by a fixed alkali, which will lay hold of the acid, and diſcharge the volatile alkali. A volatile alkali will decompound any neutral ſalt which has not a fixed alkali for its baſis ; that is, all ſuch as conſiſt of an acid, combined with an abſorbent earth or a metallic ſubſtance. By joining with the acids, in which they are diſſolved, it diſengages the earths or metallic ſubſtances, takes their place, and in conjunction with their acids forms ammoniac ſalts. Hence it might be concluded that, of all ſubſtances, next to the phlogiſton and the fixed alkalies, volatile alkalies have the greateſt affinity with acids in general : yet there is ſome difficulty in this matter ; for abſorbent earths and ſeveral metallic ſubſtances are alſo capable of decompounding ammoniacal ſalts, diſcharging their volatile alkali, and forming new compounds by uniting with their acids. This might induce us to think that theſe ſubſtances have nearly the ſame affinity with acids. But it is proper to obſerve, that a volatile alkali decompounds ſuch neutral ſalts as have for their baſis either an abſorbent earth or a metallic ſubſtance, without the aid of fire ; whereas abſorbent earths or metallic ſubſtances will not decompound an ammoniacal ſalt, unleſs they be aſſiſted by a certain degree of heat. Now, as all theſe matters are extremely fixed, at leaſt in compariſon with a volatile alkali, they have the advantage of being able to reſiſt the force of fire, and ſo of acting in conjunction therewith ; and fire greatly promotes the natural action of ſubſtances upon one another : whereas the volatile alkali in the ammoniacal ſalt, being unable to abide the force of fire, is compelled to deſert its acid ; and that ſo much the more quickly, as its affinity therewith is conſiderably weakened by the preſence of an earthy or metallic ſubſtance, both of which have a great affinity with acids.

Theſe conſiderations oblige us to conclude, that volatile alkalies have a ſomewhat greater affinity than abſorbent earths and metallic ſubſtances with acids.

Knights of ALCANTARA, a military order of knights in Spain. They make a very conſiderable figure in the hiſtory of the Spaniſh expeditions againſt the Moors.

ALCEA, *Vervain Mallow*, in botany, a plant with a woody whitiſh root, from whence proceed ſeveral ſtalks to the height of about three feet round, full of pith, and thinly beſet with longiſh hair. The leaves that proceed from the root and lower part of the ſtalks are roundiſh, with inciſſures on the edges; but thoſe that grow near the top, and placed alternately, are remarkably jagged, of a blackiſh green colour, and hairy, particularly on the lower part. The flowers are like thoſe of mallows, and of a purpliſh fleſh colour, though they are ſometimes white: they are ſucceeded by ſeeds, which are black when ripe, and ſhaped like thoſe of mallows. The medicinal virtues of this plant are the ſame with thoſe of mallow. *Brooke's Natural Hiſtory.*

ALCHEMIST, one who profeſſes, or practiſes, the art of alchemy.

ALCHEMY, the ſublimer, or more abſtruſe, parts of chemiſtry. See CHEMISTRY.

*ALCIONEUS, in fabulous hiſtory, a giant, who killed twenty-four of the ſoldiers of Hercules, and was going to knock down Hercules, when he turned aſide his club, and killed him on the ſpot; upon which ſeven young virgins, who were in love with Alcioneus, and were afflicted at his loſs, threw themſelves into the ſea, and were turned into halcyons.

*ALCITHOE, in fabulous hiſtory, was a Theban lady, who contemning Bacchus, and his orgia, was ſpinning at home, while the other women were ſolemnizing his feſtival; on which Bacchus, being incenſed, transformed her into a bat, and her ſpindle and flax into a vine and ivy.

*ALCMENA, in fabulous hiſtory, the daughter of Electryo, king of Mycenæ, and wife of Amphytrion, being beloved by Jupiter, he aſſumed the form of her huſband, and was admitted to the liberties of the marriage-bed, and made the night laſt as long as three ordinary ones. From this embrace ſprung Hercules.

*ALCMEON, in fabulous hiſtory, the ſon of Amphiarus and Eryphile: he ſlew his mother in obedience to the command of his father, who looked upon her as the cauſe of his death: after which, Alcmeon, being haunted by furies, retired to Pſophis, in Arcadia, where he expiated his crime, and married Arſinoe, the daughter of Phegeus; but afterwards, marrying Callirrhoe, the daughter of Achelous, and giving her a necklace, which he had taken from his mother and given to his other wife, Achelous ordered his two ſons to purſue and kill him.

ALCOA *Arbor*, a tree found in St. Helena, the wood of which reſembles the ebony; but is is uncertain to what genus it belongs.

ALCOHOL, in chemiſtry, ſpirit of wine rectified by repeated diſtillations, till it has acquired the utmoſt ſubtility and perfection poſſible. By theſe repeated rectifications, it is freed from its redundant phlegm, and from ſome particles of acid and oil, which, though much leſs volatile than itſelf, aſcends with it in the firſt diſtillation; nor is is poſſible wholly to avoid this inconvenience. See SPIRIT. Alcohol alſo ſignifies a very fine impalpable powder. The oriental ladies uſe antimony, reduced to an impalpable powder, for blacking their eye-lids, and call this powder alcohol.

ALCORON, AL-CORAN, or AL-KORAN, the ſcripture, or bible of the Mahometans. It is compounded of the Arabic particle *al*, and *coran*, or *koran*, derived from the verb *caraa*, or *karaa*, to read; the true ſenſe of the word is, *the reading*, or that which ought to be read.

The alcoran is divided into 114 large portions, of very unequal length, which we call chapters, but the Arabians *ſowar*, which properly ſignifies a row, or ſeries. Theſe in the manuſcript copies, are not diſtinguiſhed by their numerical order, but by particular titles, which are ſometimes taken from ſome principal matter treated of, but generally from the firſt word of note that occurs. Every chapter is ſubdivided into ſmaller portions, which we uſually call verſes, but the Arabians *aiat*, which ſignifies ſigns and wonders; ſuch are the ſecrets of God, his attributes, works, &c. delivered in thoſe verſes.

The alcoran is written in the pureſt and moſt elegant language, and is allowed to be the ſtandard of the Arabic tongue. The ſtile is, in general, beautiful and fluent. It is conciſe and often obſcure, adorned with bold figures after the Eaſtern manner, enlivened with florid and ſententious expreſſions, and in many places, eſpecially where the majeſty and attributes of God are deſcribed, ſublime and magnificent. The deſign of the alcoran was, to unite the profeſſors of the three different religions then followed in the populous country of Arabia, who, for the moſt part, lived promiſcuouſly, the far greater number being Pagans, and the reſt Jews and Chriſtians. To effect this, Mahomet pretended to be the ambaſſador of God, who, after the repeated admonitions, promiſes, and threatenings of former ages, had ſent him to eſtabliſh the true religion upon earth by force of arms, and appointed him chief pontiff in ſpiritual, and ſupreme prince in temporal affairs.

It is beyond diſpute that Mahomet was really the chief contriver of the alcoran; though it is probable, that he had aſſiſtance in his deſign from others; particularly from one Sergius, a Neſtorian monk, and a Jew named Abdallah Ebn Salam. The Mahommedans, however deny that the alcoran was compoſed either by their prophet himſelf, or any other perſon; it being their orthodox belief, that it is not only of divine original, but even eternal and uncreated, remaining, as ſome of them expreſs it, in the very eſſence of God; that the firſt tranſcript has been from everlaſting by God's throne, written on a table of vaſt bigneſs; that a copy from this table, in one volume on paper, was, by the miniſtry of the angel Gabriel, ſent down to the loweſt heaven in the month of Ramadan, whence Gabriel revealed it by parcels, ſome at Mecca, and ſome at Medina, at different times during the ſpace of twenty years, as the exigency of affairs required; giving Mahomet, however, the ſatisfaction of ſeeing the whole once a year. They add, that this original copy was bound in ſilk, adorned with gold and precious ſtones of Paradiſe.

This book is held in the higheſt eſteem and reverence among the Mahometans. They dare not ſo much as touch it without being legally purified. They read it with great attention and reſpect, never holding it below their girdles. They ſwear by it, conſult it on the moſt weighty occaſions, carry it with them to war, write ſentences of it in their banners, adorn it with gold and precious ſtones, and, knowingly, do not permit it to be in the poſſeſſion of any of a different perſuaſion or faith.

ALCOVE, among builders, a receſs, or part of a chamber, ſeparated by an eſtrade, or partition of columns, and other correſponding ornaments, in which either a bed of ſtate is placed, or ſeats to entertain company.

ALDEBARAN, in aſtronomy, a ſtar of the firſt magnitude, called the Bull's-eye, as making the eye of the conſtellation Taurus. Its longitude is 6 deg. 32 min. 0 ſec. of Gemini, and its latitude 5 deg. 29 min. 49 ſec. ſouth.

ALDER-TREE, *Alnus*, in botany, the name of a genus of trees whoſe characters are theſe: the flower is of the amentaceous kind, being compoſed of ſeveral apices, ariſing from four-leaved cups; theſe are affixed in a cluſtering manner to an axis, but theſe are barren. The young fruit appears in a different part of the tree, it is of a ſquamoſe ſtructure, and loaded with embryo ſeeds; this finally increaſes in ſize, and becomes a regular fruit, containing a number of compreſſed ſeeds. *Miller's Dict.*

There are eight ſpecies of this plant enumerated by botanical authors; but the common alder is generally meant by that name. There is a peculiar beneficial property belonging to this plant, for no beaſt will crop it; which ſaves the great charge of fencing it after planting. Their propagation is the ſame as the poplar, and, where the place is too wet for that, the alder will flouriſh and become large trees, pollards, or poles for hedges; in ſhort, there is none of the aquatic tribe will raiſe more money and ſooner than the alder, in wet meadow hedges, and in boggy, mooriſh ground, nor make ſtronger and quicker fences. This aquatic thrives but indifferently when raiſed from truncheons, or from the wild-ſet or ſucker, which it produces but few of. But there is a way to do this much more to the purpoſe; firſt, prepare a bed of well-manured fine mould, then lay the full ripe ſeed at a due diſtance from the fire, or in the ſun, and it will cauſe them to open like the fir pine-apple; then ſow the ſeeds in the bed, and you will have abundance of young plants, that on ſetting out will be ſure to grow, if rightly managed: at Midſummer cut away the ſmall ſide-ſhoots of this tree, which will prevent the ſecond growth; but if they are large, you muſt not do it, becauſe it will then make the ſap run out too much, and damage the tree. This is of great conſequence; for, by ſo doing, the large ſide-arms are prevented in their growth, which often cauſes knobs and wens that leſſen the value of their wood. *Ellis's Timber Tree Improved.*

ALDERMAN, from earlderman, Saxon, the ſecond degree of nobility among the Anglo-Saxons, and now the ſecond degree in cities or corporations. The word ſignifies a ſenior, or alderman, which, by degrees, came to ſtand for perſons of the greateſt diſtinction, becauſe ſuch were choſen to diſcharge the higheſt offices, and as they were generally intruſted with the government of the counties, inſtead of ſaying the governor, it was ſaid the earlderman of ſuch a county; and by degrees this word came to ſignify the governor of a country, or city. While the heptarchy laſted, theſe officers were only during the king's pleaſure; at laſt they were generally for life. After the Danes were ſettled in England, the earlderman was changed into that of earl, and the Normans introduced that of count, which, though different in its original ſignification, meant the ſame dignity. At this time aldermen are aſſociates to the Mayor, or civil magiſtrates of moſt of our municipal or corporate cities or towns, who form a kind of council, and regulate matters according to the policy of the place: ſometimes they alſo take cognizance of civil and criminal matters, but very rarely, and in particular caſes: their number is not limited, being in ſome places ſix, and others twenty-ſix, out of which are annually choſen the mayors, or chief magiſtrates, who, at the expiration of their mayoralty, devolve again into aldermen. An alderman ſhould be an inhabitant of the place, and reſident where he is choſe; and if he removes, he is incapable of doing his duty in the government of the place, for which he may be disfranchiſed. There are, however, frequent inſtances, wherein aldermen of London reſide at a diſtance from the city: and at this day an alderman of London reſides at Enfield, who hardly ever attends city buſineſs; but either from lenity or inattention in the citizens, he is not disfranchiſed.

*ALDERNEY, an iſland in the Britiſh channel, ſeparated from Cape La Hogue, in Normandy, by a narrow ſtreight, called the Race of Alderney, which is a dangerous paſſage, on account of the hidden rocks in it. It is a healthy iſland, has but one church, and is fruitful both in corn and paſture. The inhabitants live together in a town of the ſame name, for their greater ſafety, the iſland being but eight miles in circumference. The number of houſes are ſaid to be two hundred, and the inhabitants a thouſand It has but one harbour, called Crabby, which is at a diſtance from the town, and is only fit for ſmall veſſels. To the weſt lie the range of rocks, called the Caſkets, ſo dangerous to mariners. Long. 2. 17. W. Lat. 49, 50. N.

ALE, a fermented liquor from an infuſion of malt, and differing only from beer in having a leſs proportion of hops. See BREWING and FERMENTATION.

There are various ſorts of ale, particularly pale and brown; the former is brewed from malt ſlightly dried, and is eſteemed more viſcid than the latter, which is made from malt more highly dried or roaſted.

Medicated ALES, are thoſe wherein medicinal herbs have been infuſed, or added during the fermentation.

Gill ALE, is that wherein the dried leaves of ground-ivy have been infuſed. It is eſteemed abſterſive and vulnerary, and conſequently good in diſorders of the breaſt and obſtructions of the viſcera.

ALE-CONNER, an officer in the city of London, who inſpects the meaſures uſed in public houſes. There are four ale-conners, who are all choſe by the liverymen of the city.

* ALECTRYO, in pagan mythology, a youth ſo much eſteemed by Mars, that he entruſted him with his ſecrets, and particularly his adultery with Venus; but ſetting him to watch the door, to prevent their being ſurpriſed by the ſun, Alectryo fell aſleep, and the lovers were diſcovered; Mars was ſo exaſperated, that he changed him into a cock, which ſtill remembering the effects of its drowſineſs, watches the ſun ſo ſtrictly as to give notice of its firſt approach.

ALEMBIC, a chemical veſſel uſually made of glaſs or copper, for condenſing the vapours that riſe in diſtillation; for the alembic is properly the head or upper part of the apparatus uſed in diſtilling; though it is often uſed to ſignify the whole. See STILL and DISTILLATION.

ALEPH, the name of the firſt letter in the Hebrew alphabet, from which the *alpha* of the Syrians and Greeks was formed. The modern Jews uſe their letters as cyphers, Aleph ſtands for one; Beth for two; Gimel for three, &c.

* ALEPPO, the metropolis of Syria, is built on eight ſmall eminences, on the higheſt of which the caſtle is erected. This mount is of a conic form, and ſeems in a great meaſure to be raiſed with the earth thrown up out of a deep broad ditch, which ſurrounds it. The ſuburbs to the north-north-eaſt are next in height to this, and thoſe to the weſt-ſouth-weſt are much lower than the parts adjacent, and than any other part of the city. It is about three miles and a half in circumference, but the ſuburbs eight miles. The houſes conſiſt of a ground floor, generally arched, of an upper ſtory which is flat on the top, and either terraced with hard plaſter, or paved with ſtone: The apartments are placed on each ſide of a ſtone

court ; the cielings are of wood neatly painted, and ſometimes gilt, as are alſo the window ſhutters, the pannels of ſome of their rooms, and the cup-board doors, of which they have a great number. Theſe taken together, have a very agreeable effect. Over the doors and windows, on the inſide, are written paſſages out of the Koran, or verſes of their own compoſition. The court yard is neatly paved, and has generally a baſon, with a jet d'eau in the middle, on one or both ſides of which a ſmall ſpot of a yard or two ſquare is left unpaved for a garden. The verdure, the flowers in pots, and the playing of fountains, produce a very agreeable effect, but they can only be ſeen by thoſe within, for the paſſage into the ſtreet is cloſed with double doors, ſo contrived, that there is no looking in when the doors are opened ; beſides, there are no windows to the ſtreet, except a very few in the upper rooms, which render the ſtreets very diſagreeable to Europeans.

The better ſort of houſes have an arched alcove in the court, open to the north, and oppoſite to the fountain. The divan is that part of a room in a Turkiſh houſe raiſed above the floor, and is covered with a carpet in winter, and in ſummer with fine matts. Along the ſides are thick mattraſſes, about three feet wide, and commonly covered with ſcarlet cloth. There are likewiſe large bolſters of brocade, ſtuffed with cotton, ſet againſt the walls to lean upon : On theſe they ſet croſs-legged, for they have no chairs. People of faſhion have but one or two rooms below ſtairs, for themſelves, in the outer court, the reſt are for the ſervants and ſtabling.

The moſques in Aleppo are numerous, and ſome few of them magnificent. Before each of them is an area, with a fountain in the middle, deſigned for ablutions before prayers, and behind ſome of the larger there are little gardens.

The bazars or market places are long covered narrow ſtreets, on each ſide of which are a great number of ſmall ſhops, juſt ſufficient to hold the tradeſman and his goods, the buyer being obliged to ſtand without. Each ſeparate branch of buſineſs has a particular bazar, which is locked up as well as the ſtreets, an hour and a half after ſun-ſet : but the locks are of wood, though the doors are caſed with iron. The ſlaughter-houſes are in the ſuburbs, open to the fields. The tanners have a khan to work in near the river. The city is ſupplied with good water from ſprings, near the banks of the river Heylen, about five miles to the north-eaſt, which is conveyed from thence by an aquæduct, and diſtributed all over the town by earthen pipes. This is ſufficient for drinking, cookery, &c. but the fountains are ſupplied by wells of brackiſh water, of which there is one in every houſe. Their fuel is wood and charcoal in the houſe ; but they heat their bagnios with the dung of animals, leaves of plants, parings of fruit, and the like.

The ſeaſons are ſo regular, and the air ſo healthy, pure, and free from damps, that all the inhabitants ſup and ſleep in the court-yards, or on the houſe tops, from the end of May to the middle of September. The ſeverity of the winter continues only from the 12th of December to the 20th of January, when the air is exceſſively piercing ; and yet the ice is ſeldom ſtrong enough to bear a man, and the ſnow very ſeldom lies above a day. Narciſſuſes, hyacinths, and violets, blow during this weather. In February the fields are clothed with an agreeable verdure, to which the ſpringing up of their latter grain greatly contributes. The almond tree bloſſoms in February, and the trees begin to have leaves the beginning of March. During this month and April, nature aſſumes a gay and delightful appearance ; but before the end of May all the fields are parched and barren ; only ſome robuſt plants are capable of withſtanding the heat. From this time there is no rain till about the middle of September, when a little generally falls, which refreſhes the air, and beſtows a more agreeable aſpect to the country.

The number of ſouls in the city and ſuburbs is computed at about two hundred and thirty-five thouſand, of whom two hundred thouſand are Turks, thirty thouſand Chriſtians, and five thouſand Jews. The common language is the vulgar Arabic, but the Turks of condition uſe the Turkiſh. Aleppo is 70 miles eaſt of Scanderoon, on the ſea-coaſt, and 175 north-by-eaſt of Damaſcus. Long. 37. 40. E. Lat. 36. 12. N.

***ALEXANDER** THE GREAT, the ſon of Philip, king of Macedon, and Olympia, was born at Pella, three hundred and fifty-ſix years before the Chriſtian æra. In his youth, he broke the famous horſe called Bucephalus, which no other perſon dared to ride, ſaved the life of his father in battle, became the admiration of the moſt experienced commanders, and gained the affection of the people by his good offices and liberalty. Having ſucceeded his father when twenty years of age, he conquered Thrace and Illyrium, deſtroyed Thebes, and at the taking of that city, preſerved Pindar's houſe and family, on account of his poems. He then declared war againſt the Perſians, forced the paſſage of the Granicus, ſubdued, with ſurpriſing rapidity, Lydia, Ionia, Caria, Pamphilia, and Cappadocia. At length, he defeated the army of Darius near the Iſſus, took his treaſures, and made a great number of priſoners, among which were the mother, the wife, the ſon and two daughters of that unfortunate prince. The victory of the Iſſus was followed by the reduction of many important cities and provinces. After the taking of Tyre, he marched againſt the Jews, with whom he was offended; but Jaddus, their high-prieſt, meeting him, and ſhewing him the book of Daniel, where it was written, that a Grecian prince would deſtroy the empire of the Perſians, he obtained of him whatever he aſked. At laſt, having defeated king Porus, and extended his conqueſts even into India, he died at Babylon, either by poiſon or a drunken debauch, aged thirty-two, three hundred and twenty four years before the Chriſtian æra. He would never ſuffer more than three men to repreſent his perſon, Praxiteles in ſculpture, Lyſippus in caſting figures, and Apelles in painting.

ALEXANDRINE, in poetry, a kind of verſe, conſiſting of thirteen ſyllables alternately; ſo called from a poem on the Life of Alexander, written in this kind of verſe by ſome French poet.

ALEXIPHARMICS, in medicine, remedies for expelling or preventing the ill effects of poiſon: but ſome of the moderns having imagined that the animal ſpirits, in acute diſtempers, were effected by a malignant poiſon, the term has been underſtood to mean medicines adapted to expel this poiſon by the cutaneous pores, in the form of ſweat. In this ſenſe, alexipharmics are the ſame as ſudorifics.

The moſt active ſudorifics, or alexipharmics, ſeldom find a place in medicine, and are to be adminiſtered with ſingular caution: for a ſweat never riſes in a healthful and natural ſtate, unleſs the blood is put into an extraordinary motion; nor, when this happens, is it a ſign of health, like inſenſible perſpiration, the matter of which is void of acrimony, watery, reſembling the nutricious juices, and almoſt deſtitute of taſte or ſmell, differing very much from ſweat, which is of a ſalt taſte, a fœtid ſmell, and approaches the nature of urine. Beſides, the ſudorifics excite a great commotion, and notable orgaſm; for they act not with moderation, but rapidity; whence it comes to paſs, that in bodies replete with blood, or contaminated ſerum, by impelling the fluids with too much violence to the ſmall and narrow veſſels, they bring on dangerous and acute ſymptoms, occaſioned by the inflammation and redundance of humours. But they are particularly hurtful, where the primæ viæ are obſtructed by a load of vitious humours, where the body is coſtive, and when they are adminiſtered immediately after a violent fit of anger. *Hoffman.*

* ALFRED, ſon of Ethelwolf, was born at Wantage in Berkſhire; came to the crown of England in 871; took London from the Danes, beſieged Rocheſter, and drove them to their ſhips in 882; founded a body of laws, and died in 900; and was ſucceeded by his ſecond ſon Edward the elder.

ALGA, in botany, a genus of ſubmarine plants, called in Engliſh, graſs-wreck, and compoſed of long ſlender leaves of a duſky-green colour, very much reſembling ſome kinds of graſs. Authors mention ſeveral ſpecies of alga, the moſt conſiderable of which is the alga-marina, ſo much uſed in the glaſs trade.

ALGEBRA, a general method of reſolving problems by means of equations.

It is probable that the Indians or Arabians firſt invented this noble art; for it may reaſonably be ſuppoſed, that the ancient Greeks were ignorant of it, becauſe Pappus, in his Mathematical Collections, where he enumerates their analyſis, makes no mention of any thing like it; and beſides, ſpeaks of a local problem, began by Euclid, and continued by Apollonius, which none of them could fully reſolve, though doubtleſs they might eaſily have done, had they known any thing of algebra. Diaphantus was the firſt Greek writer of algebra, who publiſhed thirteen books about the year 800, though only ſix of them were tranſlated into Latin, by Xylander, in 1575; and afterwards, viz. anno 1621 in Greek and Latin by M. Bachet and Fermat, with additions of their own. This algebra of Diaphantus's only extends to the ſolution of arithmetical indeterminate problems. Before this tranſlation of Diaphantus came came out, Lucas Pacciolus, or Lucas de Burgo, a minorite friar, publiſhed at Venice, in the year 1494, an Italian Treatiſe of Algebra. After him, came Scipio Ferreus, Cardan, Tartagila, and ſome others, who reached as far as the ſolution of ſome cubic equations. Bombelli followed theſe, and went a little farther. At laſt came

Nunnius, Ramus, Schoner, Salignac, Clavius, &c. who all of them took different courſes, but none of them went beyond quadratics.

In 1590, Vieta entered upon the ſtage, and introduced what he called his *Specious Arithmetic*, which conſiſts in denoting the quantities, both known and unknown, by ſymbols or letters. He alſo introduced an ingenious method of extracting the roots of equations, by approximations, ſince greatly improved and facilitated by Raphſon, Halley, Simpſon, and others.

Des Cartes's rule for conſtructing cubic and biquadratic equations, was farther improved by Thomas Baker, in his *Clavis Geometrica Catholica*, publiſhed in 1684. In the year 1708 algebra was applied to the laws of chance and gaming by R. de Montmort: and ſince by De Moivre and James Bernoulli.

The elements of algebra were compiled and publiſhed by Kerſey in 1671, wherein the ſpecious arithmetic, and the nature of equations, are largely explained, and illuſtrated by variety of examples: the whole ſubſtance of Diaphantus is here delivered, and many things added concerning mathematical compoſition and reſolution, from Ghetaldus. The like has been ſince done by Preſtet in 1694, and by Ozanam in 1703; but theſe authors omit the application of algebra to geometry, which defect is ſupplied by Guiſnec in a French Treatiſe expreſly on the ſubject, publiſhed in 1704; and l'Hopital, in his Analytical Treatiſe of the Conic ſections, in 1707. The rules of algebra are alſo compendiouſly delivered by Sir Iſaac Newton, in his *Arithmetica Univerſalis*, firſt publiſhed in 1707, which abounds in ſelect examples, and contains ſeveral rules and methods invented by the author.

Algebra is of two kinds, *numeral* and *literal*.

Numeral, or *Vulgar* ALGEBRA, is that of the ancients, which only had place in the reſolution of arithmetical queſtions. In this, the quantity ſought is repreſented by ſome letter or character; but all the given quantities are expreſſed by numbers.

Literal, or *Specious* ALGEBRA, or the *New* ALGEBRA, is that wherein the given or known quantities, as well as the unknown, are all expreſſed or repreſented by their ſpecies, or letters of the alphabet.

By this the memory and imagination are eaſed of that vaſt ſtreſs or effort required to keep ſeveral matters, neceſſary for the diſcovery of the truth in hand, preſent to the mind. Specious algebra is not, like the numeral, confined to certain kind of problems; but ſerves univerſally for the inveſtigation or invention of theorems, as well as the ſolution and demonſtration of all kinds of problems, both arithmetical and geometrical. The letters uſed in algebra, each ſeparately repreſent either lines or numbers, as the problem is arithmetical or geometrical; and together, they repreſent planes, ſolids, and powers, more or leſs high, as the letters are in a greater or leſs number: for inſtance, if there be two letters, $a\,b$, they repreſent a rectangle, whoſe two ſides are expreſſed, one by the letter a, and the other by b; ſo that by their mutual multiplication they produce the plane $a\,b$. When the ſame letter is repeated twice, as $a\,a$, they denote a ſquare. Three letters $a\,b\,c$, repreſent a ſolid, or a rectangle parrallelopiped, whoſe three dimenſions are expreſſed by the three letters a, b, c, the length by a, the breadth by b, and the depth by c; ſo that by their mutual multiplication they produce the ſolid $a\,b\,c$. As the multiplication of dimenſions is expreſſed by the multiplication of letters, and as the number of thoſe may be ſo great as to become incommodious, the method is, only to write down the root, and on the right hand to write the index of the power, that is, the number of letters whereof the power to be expreſſed does conſiſt; as a^2, a^3, a^4, a^5; the laſt of which ſignifies as much as a, multiplied five times into itſelf; and ſo of the reſt. See the articles CHARACTER, and QUANTITY. See alſo ADDITION, SUBTRACTION, and MULTIPLICATION.

ALGEBRA has alſo been applied to the conſideration and calculus of infinites; from whence a new and extenſive branch of knowledge has ariſen, called the Doctrine of Fluxions. See FLUXIONS.

ALGEBRAICAL, ſomething that relates to algebra. Thus we ſay, algebraical characters, curves, ſolutions, &c.

ALGEBRAICAL *Curve*, a curve wherein the relation of the abſciſſes to the ordinates may be defined by an algebraical equation. Theſe are alſo called geometrical lines, or curves. Algebraical curves ſtand contradiſtinguiſhed to mechanical, or tranſcendental curves.

ALGEBRAIST, one who is ſkilled in the ſcience of algebra.

ALGENEB, a fixed ſtar of the ſecond magnitude, in Perſeu's right ſide.

* ALGIERS, one of the ſtates of Barbary in Africa. It has the Mediterranean Sea on the north, mount Atlas on the ſouth, which ſeparates it from Biledulgerid, the kingdom of Fez on the weſt, and that of Tunis on the eaſt. It is about ſix hundred and ſixty miles in length, but in

breadth not half ſo much. It is governed by a dey, under whom each province has a bey; but it may more properly be called a republic of ſoldiers under the protection of the Sultan of the Turks. In this province there are a great many ruins of towns and caſtles built by the Romans. The inhabitants of the mountains are divided into ſeveral tribes, who are often at variance among themſelves, and yet will unite againſt the Turks, and are able to raiſe an army of forty thouſand men. Their only weapons are javelins and arrows. The country about Algiers, the capital city, is very beautiful, and produces plenty of all ſorts of pulſe, fruit and flowers. It yields a charming, proſpect, being diverſified with riſing hills and pleaſant vales, which never loſe their verdure; for there is not only a conſtant ſupply of young graſs, but the trees are full of leaves all the year, which is owing to the coolneſs of the ſoil, it being always well watered, inſomuch that neither the heat of the ſummer nor the coolneſs of winter can ever ſtrip them of their green livery. There are a multitude of vines of a ſurpriſing beauty, which are exceeding fruitful, and often form a kind of natural arbor. The trees begin to bloſſom in February, and in May and June the fruit is ripe. For a dozen miles about Algiers there is a plain terminated by a mountain, in which there are ſaid to be twenty thouſand gardens; there are many without houſes, but only huts made with the branches of trees. Beyond the mountain there is another beautiful plain, well watered, and very fruitful, being near thirty miles in length. It is called the plain of Mattejar, and corruptly Muteejah. It produces a crop twice, and ſometimes thrice a year. Near the ſea, there are barren ſpots, thick woods, and venemous reptiles. The fields and gardens are not incloſed with walls, but with Barbary fig-trees, which take root from a leaf that becomes the trunk of the tree, and the leaves which proceed from thence become branches. They are of very quick growth, and being prickly, make excellent hedges, which, being continually green, have a very fine effect. The rind of the fruit is very thick, and not good to eat. Orange, citron, and other fruit trees are in great plenty, but the fruit is not very tempting, becauſe they never cultivate the trees, but leave every thing to nature. When women of faſhion go into the country, they ſit croſs-legged upon a ſaddle made fit for that purpoſe, incloſed in a large covering with gauze or twiggs woven together, covered with fine white clear linen, and open at the top; through this incloſure they can ſee and not be ſeen.

* ALGIERS, a city, the capital of the above kingdom, built on the declivity of a hill by the ſea-ſide, in the form of an amphitheatre. The ſtreets are ſo narrow, that they will ſcarce admit two perſons to walk a-breaſt, and the middle part is lower than the ſides. When any loaded beaſts, ſuch as camels, horſes, mules, or aſſes, paſs along, you are forced to ſtand up cloſe to the wall to let them paſs by. There is but one broad-ſtreet, which runs through the city from eaſt to weſt, in which are the ſhops of the principal merchants, the market for corn and other commodities. There are ſaid to be about one hundred thouſand inhabitants in the city, comprehending five thouſand Jewiſh families, beſides Chriſtians.

They have no phyſicians among them, for they take no internal remedies, they ſay it is tempting God. One of the deys might have been cured of a fever by a ingenious French ſurgeon who was his ſlave; but he refuſed it, ſaying the number of his days was appointed from all eternity. Long. 3. 30. E. Lat. 36. 40. N.

ALGOL, a fixed ſtar of the third magnitude, called Meduſa's Head, in the conſtellation Perſeus.

ALIAS, a ſecond or further writ iſſued from the courts of Weſtminſter, after a capias, &c. ſued out without effect.

ALIBI, in law, implies the abſence of the accuſed party; or as being at a diſtance from the place where the fact was committed, at the time mentioned in the indictment. The word is Latin, and ſignifies elſewhere.

ALIEN, in law, one born in a ſtrange country, not within the king's allegiance, in contra-diſtinction to a denizen, or natural ſubject. An alien is incapable of inheriting lands in England, till naturalized by act of parliament. No alien can vote at the election of members of parliament; nor enjoy any office, or be returned on any jury, unleſs where an alien is party in a cauſe, when the inqueſt is compoſed of an equal number of denizens and aliens. The reaſons for eſtabliſhing theſe laws were, that every man is preſumed to bear faith and love to that prince and country where he received protection during his infancy; and that one prince might not ſettle ſpies in another's country; but chiefly that the rents and revenues of the country might not be drawn to the ſubjects of another. It has been thought that the laws againſt aliens were introduced in the time of Henry II. when a law was made at the parliament

ment of Wallingford, for the expulſion of ſtrangers, in order to drive away the Flemings and Picards, introduced into the kingdom by the wars of king Stephen. Others have imagined that the orignal of this law was more ancient ; and that it is an original branch of the feudal law ; for by that law no man can purchaſe any lands but he muſt be obliged to do fealty to the lords of whom the lands are holden ; ſo that an alien that owned a previous faith to another prince, could not take an oath of fidelity in another ſovereign's dominions. *Cunningham's Law Dict.*

ALIEN-DUTY, an impoſt on all goods imported by aliens, over and above the duty for ſuch goods imported by Britiſh ſubjects, and on Britiſh bottoms.

ALIENATION, in law, the act of making over a perſon's property in lands, tenements, &c. to another.

ALIMENT, in a general ſenſe, whatever contributes to the nouriſhment of an animal or vegetable body.

ALIMENT, among phyſicians, whatever is capable of nouriſhing an animal body. The loſs which we ſuſtain daily makes it neceſſary that it ſhould be repaired by ſubſtances analogous to thoſe of our body, ſuch as aliment and drink, the ſtimulus to which is hunger and thirſt ; wherefore it is neceſſary to know in general their kinds and principal qualities, in order to make a proper choice. Solid Aliments are taken from ſeeds, fruits, leaves, ſtalks, and roots ; of all which the ſeed is the moſt laboured, and contains a mealy and milky ſubſtance ; from whence a ſoft oil may be drawn, friendly to human bodies.

The principal aliment is bread, which is made of wheat, rye, barley, and Turkey corn. That of wheat is moſt nouriſhing ; barley is dry, and rye is laxitive. The cruſt is eaſieſt of digeſtion. The other farinaceous ſubſtances are beans, peaſe, and lentils, which nouriſh much, but are heavy, windy, and viſcous ; and conſequently, by conſtant uſe are apt to cauſe obſtructions.

Rice, barley, and oats, properly prepared, are moiſtening, emollient, and reſtorative. Nuts, almonds, and cheſnuts, are full of nouriſhing oil, but are hard of digeſtion.

Fruits which are pulpous and tart, abound with water, and are refreſhing, moiſtening, and ſedative ; appeaſing the too rapid motion of the blood, quenching thirſt, digeſting eaſily ; ſuch as ſtrawberries, gooſeberries, currants, apricots, figs, peaches, pears, and apples. Theſe ſhould be eaten ripe, and in a ſmall quantity ; but they are windy, and therefore are beſt boiled, or baked, and made into ſweetmeats.

Pot-herbs and roots are leſs nouriſhing than the mealy ſubſtances. Lettuce, ſuccory, ſorrel, purſlain, refreſh, moiſten, looſen the belly, and appeaſe the orgaſm of the blood. Artichokes, cellery, creſſes, aſparagus, parſley, are a little heating. Truffles, champignions, garlic, ſhallots, pepper, cloves, nutmegs, muſtard, heat very much. Animals are either terreſtrial, volatile, aquatic, or amphibious. Theſe differ greatly with regard to their kind, age, manner of living, and ſubſtance. Fiſh nouriſh the leaſt of all animals, becauſe they abound with phlegm. Young animals have a plenty of a ſoft and nouriſhing juice, but that of the older is more nouriſhing. The juices of the old are ſpirituous, gelatinous, and agreeable to the taſte ; but the fleſh is hard and difficult of digeſtion. Wild animals are more light and digeſtible than tame. Their white parts contain a very ſucculent ſubſtance of tender fibres, and yield a ſoft aliment, and are eaſy of digeſtion.

Liquid ALIMENTS are milk, eggs, chocolate, ſoops, broths, &c. Milk is properly nothing but chyle, and does not need any great preparation in the ſtomach. It is a good aliment for perſons whoſe ſtomachs are languid, and for children. New laid eggs yield very good nouriſhment, are eaſy of digeſtion, and agree with perſons of exhauſted bodies, and the aged.

Chocolate is nouriſhing ; ſtrengthens the ſtomach, reſtores the body, helps the digeſtion, and ſoftens ſharp humours. It is very proper for perſons of a weak ſtomach. Drinks reſtore the fluid parts of the body ; they are a vehicle for other aliments, and render the digeſtion eaſy. Water is the principal, moſt ſalutary, and moſt neceſſary for life, of which ſoft water is the beſt, and which lathers readily with ſoap. It is the greateſt diſſolvent that we have. Water alone has cured many indiſpoſitions, but too much relaxes and weakens the ſolids, and cauſes many infirmities. Wine drank too freely is prejudicial to health ; but moderately, it ſtrengthens the ſolids, and facilitates digeſtion ; its ſucceſs, as well as all other ſpirituous liquors, hardens the fibres, affect the nerves, diminiſh the ſecretions, deſtroy the appetite, and induce chronical diſeaſes.

That malt liquor is accounted the beſt that is ſpecifically lighteſt. The beſt kind of beer does not render the head heavy, nor grows ſour upon the ſtomach, nor inflates the hypochondria. All thick, muddy, heavy, ſtale beer not ſufficiently boiled, offends the head, generates wind, obſtructions, the ſtrangury, aſtma, and the cholic.

Tea promotes perſpiration, ſtrengthens and clears the ſtomach, and helps digeſtion. Coffee is taken after dinner to haſten the digeſtion, and allay the fumes of wine. Moderately uſed it ſubtilizes the humours, but its exceſs agitates the blood.

Broth, or ſoup, abounds with a ſoft, moiſtening, and nouriſhing jelly, whence they are good reſtoratives. Meat that is roaſted contains an excellent nouriſhing juice, the moiſt parts being diſſipated by the fire.

Things fried are proper only for good ſtomachs.

Spice, vinegar, &c. in a ſmall quantity, may correct the faults of the aliment, but are pernicious when uſed to create an appetite; for which reaſon made-diſhes are commonly bad. The appetite, excited by the quality and diverſity of the viands, provokes perſons to eat more than they ought; which cauſes indigeſtions, frequent indiſpoſitions, and ſometimes dangerous diſeaſes.

The method of preſerving health is to live upon plain ſimple aliment, lightly ſeaſoned, and in quantity agreeable to the age, ſtrength of the ſtomach, ſeaſon of the year, ſex, conſtitution, and chiefly to what nature has found by experience to require.

Many perſons, by their temperance have lived to a very advanced age; therefore thoſe that are fond of life and health ſhould imitate their regimen. Exceſſes in eating and drinking are extremely pernicious.

Perſons of a weak delicate conſtitution, or who are juſt recovered from illneſs, ſhould uſe ſoft light aliments agreeable to the ſtomach.

Acid, tenacious, viſcous aliments, pies of all kinds; things that are fat, and of a blackiſh ſubſtance, are generally unfit for chylification, or render the chyle bad.

Strong, robuſt, young perſons, who uſe much exerciſe, ought to eat more than others; and may be more free with the groſſer kind of aliment.

Children whoſe ſtomachs are weak, and veſſels fine, ought to uſe a light, ſlender, thin, ſoft aliment, eaſy of digeſtion; wherefore infants ſhould be fed with fluid milk, to avoid cauſing obſtructions in their fine and delicate veſſels. Nurſes ſhould obſerve an exact regimen, and ſhun all ſorts of violent paſſions; For they diſturb digeſtion, and communicate their bad effects to their children. When infants are weaned, they ſhould not be accuſtomed to ſpirituous liquors and ſtrong food, eſpecially the ſalt and ſmoak-dried, which are hard of digeſtion, and yield bad nouriſhment. The beſt method is to eat a little at a time and often.

In an advanced age the fluids are more thick, the ſecretions ſlow, and the ſolids more ſtiff than in youth; wherefore they require leſs food, and of a more ſoft, nouriſhing, moiſtening kind, eaſy of digeſtion, and not too much at a time, eſpecially in the evening.

At any time of life, eſpecially in old age, the immoderate uſe of ſalt and ſmoke-dried meat, acid and aromatic vegetables, as well as ſpirituous liquors, tend to harden and ſtiffen the parts of the body, inſtead of affording good nouriſhment; beſides, the digeſtion of theſe aliments is difficult, and render the blood ſo acrid, as to hurt the capillary veſſels. However, an acquired habit is difficult to be left off, and we find many perſons enjoy a good ſtate of health when their meat and drink are very indifferent, becauſe they are become cuſtomary, and they are apt to fall ſick when they attempt to change their manner of life; for cuſtom is a ſecond nature: all great changes ought to be brought about inſenſibly; it is therefore good not to contract a habit of any kind; wherefore, perſons of a good conſtitution ſhould live in a various manner, and refuſe no kind of aliment; and ſhould ſometimes be in town, and ſometimes in the country; ſhould uſe much exerciſe, and ſhould even now and then exceed the exact bounds of moderation, and omit a meal now and then.

Hunger points out the beſt time of eating, but cuſtom confines us to certain hours. Perſons who find no inconvenience from dining and ſupping every day, need not change their manner of life. In youth, wherein there is a great diſſipation, and in age, where ſtrength is wanting, and when little is eaten at a time, ſomething taken between meals is not amiſs. However, it is neceſſary to obſerve, that when the ſtomach is bad, perſons ſhould not begin to eat again till the laſt meal is digeſted. When a perſon is greatly fatigued, and his ſpirits diſſipated, it will be neceſſary to reſt before eating. In caſes of diſtreſs and ſorrow, the aliment ſhould be very light and ſmall in quantity, becauſe the ſtomach is weak at thoſe times.

In the ſummer, when the ſpirits and fluid part are apt to evaporate, the aliment ſhould be light, moiſt, fluid, and eaſy of digeſtion, to repair the loſs with greater ſpeed; whereas in winter the ſtomach will admit of groſſer food.

ALIMONY, in law, implies that allowance which a married woman ſues for, and is entitled to, upon any occaſional ſeparation from her huſband.

ALIQUANT *Part*, in arithmetic, that number which cannot meaſure any number exactly without ſome remainder, as 7 is an aliquant part of 18, for twice 7 wants 4 of 18, and three times 7 exceeds 18 by 3.

ALIQUOT *Part*, that part of a number or quantity, as will exactly meaſure it without any remainder, as 2 is an aliquot part of 4, 3 of 9, 4 of 16, 5 of 25, &c.

* ALKAHEST, or ALCAHEST, among chemiſts, an univerſal ſolvent or that which will diſſolve all bodies without exception. The word appears to have been coined by Paracelſus.

The principal chemiſts are now perſuaded that no ſuch ſolvent ever exiſted in nature: at leaſt, that no mortal was ever poſſeſſed of the ſecret. This, indeed, ſeems ſufficiently evident from the very nature of the alkaheſt; for if it will diſſolve all bodies, it will be impoſſible to be kept in any veſſel. Van Helmont therefore cannot be credited, when he aſſerts that he had a bottle filled with alkaheſt lent him; becauſe it could not be contained in any bottle, as it would diſſolve the veſſel and be loſt.

ALKEKENGI, winter-cherry, in botany. It grows wild in ſome parts of Europe, and ſpreads ſo much in our gardens as not to be eaſily extirpated. The fruit ripens about the beginning of October, and ſometimes continues to near the end of December, after which the plant dies to the ground. Winter cherries have an acidulous not unpleaſant taſte, mixed with, or followed by, a ſlight bitterneſs.

Thoſe cherries are accounted powerful diuretics, operating without heat or irritation, and which may therefore be ventured on any inflammatory diſtempers: five or ſix of the cherries in ſubſtance, or an ounce of the expreſſed juice, are directed for a doſe. They are ſaid to be, in ſome places, eaten, among common people, by handfuls, and with good ſucceſs, againſt ſuppreſſions of urine, and for promoting the expulſion of mucus and gravel. Mr. Ray tells us of a gouty perſon who was cured, and kept free from returns of his diſorder, by taking eight of theſe cherries at each change of the moon; and that the operation of the medicine procured a diſcharge of extremely fetid matter by urine. The cherries may be dried ſo as to be pulverable, or the depurated juice inſpiſſated with a gentle heat to the conſiſtence of a rob, or extract, and in this ſtate preſerved for uſe. *Lewis's Hiſtory of the Materia Medica.*

ALL-SAINTS, a feſtival obſerved by Chriſtians, in commemoration of all the ſaints in general. It is celebrated on the firſt of November.

ALL-SOULS, a feſtival obſerved on the ſecond of November, in commemoration of all the faithful deceaſed.

ALLA, or ALLAH, the name of God, among the profeſſors of the Mahometan religion. It properly ſignifies the adorable Being.

ALLEGATION, in law, the producing inſtruments, or deeds, for proving the truth of ſomething litigated before the court.

ALLEGIANCE, in law, the obedience which every ſubject owes to his lawful ſovereign. Allegiance is either natural, acquired, or local. Natural Allegiance is that which every ſubject born ought to pay immediately upon his birth. Acquired Allegiance is that which any perſon naturalized, or made a denizen owes to the king. Local Allegiance is that which a perſon, on his entering the dominions of another prince, ought to pay for his protection.

Oath of ALLEGIANCE is that which is taken by the ſubject, wherein he acknowledges the king a temporal prince.

ALLEGORICAL, belonging to, or partaking of the nature of an allegory. See ALLEGORY.

ALLEGORICAL *Poetry*, that wherein ſome uſeful truth is conveyed under the veil of an allegory.

Allegorical poetry in which under the diſguiſe of imaginary perſons, and things, ſome real action, or inſtructive moral is conveyed to the mind, gives great latitude to genius, and affords ſuch a boundleſs ſcope for invention, that the poet is allowed to ſoar beyond all creation; to give life and action to virtues, vices, paſſions, diſeaſes, and natural and moral qualities; to raiſe floating iſlands, inchanted palaces, caſtles, &c. and to people them with the cratures of his own imagination.

But whatever is thus raiſed by the magic of his mind, ſhould be viſionary and typical, and the myſtical ſenſe appear obvious to the reader, and inculcate ſome moral or uſeful leſſon in life; otherwiſe the whole will be deemed the effects of a diſtempered brain, inſtead of the productions of real wit and genius. The poet, like Jaſon, may ſail to parts unexplored, but will meet with no applauſe if he returns without the golden fleece; for theſe romantic reveries would be unpardonable, but for the myſtical meaning and moral that is thus artfully and agreeably conveyed with them; and on which account only, the allegory is indulged with greater liberty than any other ſort of writing.

This ſort of allegory is the moſt eſſential part of poetry; for the power of raiſing images of things not in being, giving them a ſort of life and action, and preſenting them, as it were before the eyes, is thought to have ſomething in it like creation: but then, in ſuch compoſitions, they always expected to find a meaning couched under them of conſequence, and we may reaſonably conclude that the allegories of ancient poets would never have been handed down to us, had they been deficient in this reſpect.

As the fable is that part immediately offered to the reader's conſideration, and intended as an agreeable vehicle to convey the moral, it ought to be bold, lively, and ſurpriſing, that it may excite curioſity, and ſupport attention. There muſt likewiſe be a juſtneſs and propriety in the fable, that is, it muſt be cloſely connected with the ſubject on which it is employed; for, notwithſtanding the boundleſs compaſs allowed the imagination in theſe writings, nothing abſurd, or uſeleſs, is to be introduced. In epic poetry ſome things may, perhaps be admitted for no other reaſon but to ſurpriſe, and to raiſe what is called the wonderful, which is as neceſſary to the epic as the probable: but in allegories, however wild and extravagant the fable and the perſons introduced, each muſt correſpond with the ſubject they are applied to, and, like the members of a well-written ſimile, bear a due proportion and relation to each other: for we are to conſider that the allegory is a ſort of extended, or rather multiplied ſimile, and therefore, like that, ſhould never looſe the ſubject it is intended to illuſtrate: whence it will appear, that the genius and fancy are here inſufficient without the aid of taſte and judgment.

It is not ſufficient that the fable be correſpondent with the ſubject, and have the properties above deſcribed; for it muſt alſo be conſiſtent with itſelf. The poet may invent what ſtory he pleaſes, and form any imaginary beings that his fancy ſhall ſuggeſt; but here, as well as in dramatic writings, when perſons are once introduced they muſt be properly ſupported to the end, and all ſpeak and act in character; for notwithſtanding the general licence here allowed, ſome order muſt be obſerved, and, however wild and extravagant the characters, they ſhould not be abſurd.

ALLEGORY, a figurative diſcourſe, in which ſomething elſe is intended than what is contained in the words literally taken.

ALLEGRO, in muſic, an Italian word, ſignifying that the part is to be played in a briſk, gay, and ſprightly manner.

ALLEY, in gardening, a ſtrait, parralel walk, bounded on both ſides with trees, ſhrubs, &c. and generally covered with gravel or turf. It is diſtinguiſhed from a path, by being broad enough for two to walk a-breaſt.

Covered ALLEY, that over which the branches of the trees on each ſide meeting each other, form a ſhade.

ALLEY *in ziczac*, is that formed by ſeveral angles, in order to render it more ſolitary and obſcure.

ALLIANCE, in the civil and canon law, the relation between two perſons, or two families, contracted by marriage.

ALLIANCE, is alſo uſed to ſignify a treaty entered into by ſovereign princes or ſtates, for their mutual ſafety or defence.

Defenſive ALLIANCE, is that whereby the contracting parties engage to ſtand by and aſſiſt each other againſt any power that ſhall attack, either.

Offenſive ALLIANCE implies an agreement between powers, whereby they engage themſelves to attack jointly ſome other prince or ſtate.

ALLIARIA, *Jack by the Hedge*, or *Sauce all alone*, in botany, the name of a plant, with a ſlender, white, ligneous root, and a garlick ſmell. It is common in hedges and ſhady waſte places, and flowers in May and June. It is good in cold ſcurvies, and in conſtitutions that abound with acids. Outwardly, the juice is good in putrid and ſordid ulcers. If the herb has been dried for a day in the ſhade and then bruiſed in a mortar, and the juice expreſſed, it will keep in bottles for ſeveral years, with oil at the top. *Brookes's Natural Hiſtory.*

ALLIGATION, in arithmetic, the method of reſolving queſtions relating to the mixture of commoditives, and their value and effects, when united in a compoſition.

Alligation is of two kinds, *medial* and *alternate.*

ALLIGATION *Medial* is when, from the ſeveral quantities and rates of divers ſimples given, we diſcover the mean rate of a mixture compounded out of them. To anſwer queſtions of this ſort, the ſum of all the quantities propoſed to be mixed, and alſo the ſum of their particular rates, muſt be found. Then the proportion will be, as the ſum of all the quantities is to the ſum of all their rates, ſo is any part of the mixture to the mean rate or price of that part.

ALLIGATION *Alternate*, is when the rates or qualities of divers ſimples are given, and the quantity of each is required, neceſſary to make a mixture of the given rate or quality.

ALLIGATION *Alternate* ſhews the due proportion of ſeveral ingredients, and counterchanges the places of ſuch exceſſes or differences as ariſe between the mean price and the extremes, aſcribing that to the great extreme, which proceeds from the leſſer, and contrarily. To reſolve queſtions relating to alligation alternate, the rule is to ſet down all the particular rates, with their mean rate; then take the ſeveral differences between the mean rate, and the particular rates, ſetting down thoſe differences alternately; this done, add all the differences into one ſum: then the proportion will be, as the ſum of all the differences is to the ſum of all the quantities given; ſo is every particular difference to its particular quantity required.

For the ſolution of queſtions appertaining to *alligation partial*, ſo called when the particular rates of all the ingredients propoſed to be mixed, the mean rate of the whole mixture, and any one of the quantities to be mixed are given, to find how much of each of the other ingredients is requiſite to compoſe the mixture, take the following rule:

Set down all the particular rates, with their mean rate, and find their differences, as in *Alligation alternate*, without having any regard to the quantity given.—Then the proportion will be as the quantity found by the differences of the ſame name with the quantity given, is to the given quantity; ſo is any of the other quantities found by the differences, to the quantity of its name.

ALLIGATOR, in natural hiſtory, an amphibious creature common in South-America, imagined by ſome to be the ſame with the chrocodile found in Aſia, and Africa. Its head is long, and ſlender towards the extremity, gradually forming a ſnout like that of a hog. The upper and lower jaws have a row of very ſtrong and pointed teeth. Theſe creatures abound in the river of Guaiaquil in South America, and when tired of fiſhing leave the water to baſk in the ſun, where they appear more like logs of half rotten wood thrown aſhore by the current, than living creatures; but upon perceiving any veſſels near them they immediately plunge into the water. Some of them are of ſo monſtrous a ſize, as to exceed five yards in length. During the time they lie baſking on the ſhore, they keep their huge mouths wide open, till filled with muſchetos, flies and other inſects, when they ſuddenly ſhut their jaws, and ſwallow their prey. Its whole body is covered with ſcales impenetrable to a muſket ball, unleſs it happens to hit them in the belly near the fore-legs, the only part which is vulnerable. The alligator is an oviparous creature. The female makes a large hole in the ſand near the brink of a river, and there depoſits her eggs, which are nearly equal to thoſe of an oſtrich, and as white as thoſe of an hen, but much more ſolid. She generally lays about an hundred continuing in the ſame place till they are all depoſited, which is about a day or two. She then covers them with the ſand, and the better to conceal them, rolls herſelf not only over her precious depoſitum, but to a conſiderable diſtance. After this precaution ſhe returns to the water, till natural inſtinct informs her, that it is time to deliver her young from their confinement: when ſhe comes to the ſpot, followed by the male, and tearing up the ſand, begins breaking the eggs, but ſo carefully that ſcarcely a ſingle one is injured; and a whole ſwarm of little alligators are ſeen crawling about. The female then takes them on her neck and back, in order to remove them into the water; but the watchful gallinazos, large birds common in South America, make uſe of this opportunity to deprive her of ſome; and even the male alligator, which, indeed, comes for no other end, devours what he can, till the female has reached the water with the few remaining; for all thoſe which either fall from her back, or do not ſwim, ſhe herſelf eats; ſo that of ſuch a formidable brood happily not more than four or five eſcape. Theſe alligators are the greateſt deſtroyers of the fiſh, it being their moſt ſafe and general food; nor are they wanting in addreſs to ſatisfy their deſires: eight or ten, as it were by compact, drawn up at the mouth of a river or creek, whilſt others of the ſame corps go a conſiderable diſtance up the river and chaſe the fiſh downwards, by which means none of any bigneſs eſcape them. When they cannot find fiſh to appeaſe their hunger, they betake themſelves to the meadows bordering on the banks of the river, and devour calves and colts; and in order to be more ſecure in ſeizing their prey, take the opportunity of the night, that they may ſurpriſe them in their ſleep: and it is obſerved, that thoſe alligators which have once taſted the fleſh, become ſo fond of it, as never to take up with fiſh but in caſes of neceſſity. There are even too many melancholy inſtances of their devouring the human ſpecies, eſpecially children, who from the inattention natural to their age, have been without doors after it is dark; and though at no great diſtance, theſe voracious animals have dared to attack them, and having once ſeized the child with their mouth, to make ſure of their prey againſt that aſſiſtance which the cries of the victim nevey fail to bring, haſten into the water, where they immediately drown it, and then return to the ſurface and devour it.

ALLIUM, garlic, in botany, the name of a plant, with a bulbous root, conſiſting of ſeveral membranes, of a whitiſh colour, mixed with a purpliſh caſt. Garlick is proper to warm and ſtimulate the ſolids, and diſſolve the groſs clammy fluids, whence it is good in cold conſtitutions, and in moiſt aſthmas, as well as all defluxions on the breaſt. It has been found very ſerviceable in the dropſy, for it will ſometimes cure it without any other medicine. It may be given alone, or in a decoction, made into a ſyrup; but it muſt be avoided in all inflammatory diſpoſitions and hot diſeaſes. It may be eaſily propagated in gardens, by planting the cloves, or ſmall bulbs, in Auguſt or September, about four or five inches from each other. In the middle of June the leaves ſhould be tied in knots, to prevent their running to ſeed, and then the bulb will be greatly enlarged. Towards the end of July the leaves will begin to wither, and then the root ſhould be taken out of the ground, and hanged up in a dry room. *Brooke's Natural Hiſt.*

ALLOCATIONE *Facienda*, a writ for allowing to an accountant ſuch ſums of money as he has lawfully expended in his office; directed to the lord-treaſurer, and barons of the exchequer.

ALLOCATO *Comitatu*, a new writ of exigent allowed, before any other county-court, held on the former not being fully ſerved or complied with.

ALLODIAL, an epithet applied to an inheritance held without paying any acknowledgement to either lord or ſuperior.

Allodial lands are what we term free lands, which a perſon enjoys without paying any fine, rent, or ſervice.

ALLOY, or ALLAY, a proportion of a baſer metal with one that is finer. All gold coin has an alloy of ſilver, and ſilver coin an alloy of copper. A pound weight of ſtandard gold, by the preſent ſtandard of the mint, is two and twenty carots fine, and two carots alloy; and a pound weight of ſtandard ſilver conſiſts of eleven ounces two penny weights of fine ſilver, and eighteen penny weights of alloy. And in proportion as gold or ſilver has more or leſs alloy than the abovementioned, it is ſaid to be coarſer or finer than the ſtandard.

ALLUSION, in rhetoric, a figure whereby ſomething is applied to, or underſtood of another, on account of ſome ſimilitude between them.

ALMANAC, a table containing a calendar of days and months, the riſing and ſetting of the ſun, the age of the moon, the eclipſes of both luminaries, &c.

ALMOND-TREE, *Amygdalus*, in botany, the name of a diſtinct genus of trees, with roſaceous flowers, and an oblong ſtony fruit, in which is incloſed a kernel of the ſame ſhape.

Almond-trees have a beautiful effect in a garden, while they continue in bloom, and are accordingly cultivated in this country more for the ſake of their flowers than their fruit: though the latter are alſo well worth attending to, and may, with proper care, in a well-ſheltered warm ſituation, be produced very good in England. The bloſſoms of theſe trees often appear in February, when the ſpring is forward: but if froſt comes on while they are out, their beauty is of ſhort duration, for they are ſoon deſtroyed, and produce very little fruit. On the other hand, if theſe trees do not flower till late in March, they ſeldom fail of bearing plenty of almonds, many of which will be very ſweet, and fit for the table when green; but they will not keep long.

ALMONDS, the fruit of the almond-tree. There are two kinds of almonds, ſweet and bitter. The greateſt quantity of both ſorts are produced in Syria, Barbary, Turkey, Spain, Italy, the iſland Cypres, and France. In England, three ſorts of almonds are diſtinguiſhed, ſmall Barbary almonds, long Jordan almonds, and ſhort, broad, Spaniſh or Valencia almonds.

The medical uſes of ſweet almonds are, to ſoften and obtund acrimony, and to render reſinous ſubſtances ſoluble in water, and in the animal fluids. The reſins of jalap, ſcammony, and others, triturated with almonds, diſſolve in water into an emulſion, and in this form operate effectually, without producing the violent gripes and other dangerous conſequences, which they never fail to do when given by themſelves. Bitter almonds are poiſonous to animals, particularly to birds. In the human body, they act as reſolvents and aperients. Sweetened with ſugar, or made into an emulſion, they are conſidered as diuretic, and an anthelmintic; but ſeem to be too dangerous a medicine to be given with ſafety, there being inſtances of cordial ſpirits flavoured with bitter almonds proving poiſonous to the human ſpecies.

ALMONER, an officer appointed to diſtribute alms to the poor.

Lord ALMONER, or *Lord high* ALMONER *of England* is an eccleſiaſtical officer, generally a biſhop, who has the forfeiture of all deodands, and the goods of felos de ſe, which he is to diſtribute among the poor. He has alſo, by virtue of an ancient cuſtom, the power of giving the firſt diſh from the king's table to whatever poor perſon he pleaſes, or, inſtead of it, an alms in money.

ALNAGE, or AULNAGE, the meaſuring of woollen manufactures with an ell.

ALNAGER, a public officer, whoſe duty it is to examine into the aſſize of all woollen cloth, fix ſeals upon the various pieces, and collect the alnage-duty for the king.

ALOOF, in navigation, keep aloof, (commonly called keep the luff) is the command given by the pilot or officer to the helmſman, to direct the ſhip's courſe nearer the wind, or nearer that point of the compaſs which the wind blows from. This phraſe probably regards the dangers of a lee-ſhore, from which the pilot might order the helmſman to "keep aloof."

ALOE, in botany, a genus of plants, with a liliaceous flower, conſiſting of one tubular leaf, divided into ſix deep ſegments at the edge. In ſome ſpecies of this genus, the cup, and in others the piſtil, finally becomes a fruit, or ſeed-veſſel, of an oblong cylindric form divided into three cells, containing flat ſemicircular ſeeds. The ſoil in which theſe plants thrive beſt is on half freſh light earth from a common, (and if the turf is taken with it, and rotted, it is much better;) the reſt ſhould be white ſea-ſand, and ſifted lime-rubbiſh, of each of theſe two a fourth part; mix theſe together ſix or eight months at leaſt before it is uſed, obſerving to turn it over often in this time. The firſt ſpecies of aloes is very hardy, in reſpect to cold; and has, in mild winters, endured abroad, being planted in a very dry ſoil, and under a ſouth wall; but, as they are liable to be killed in hard froſts, they generally are kept in pots or tubs in a common green-houſe, with oranges, myrtles, &c. but muſt have very little moiſture in winter. Moſt of the other ſorts are better preſerved in an airy glaſs-caſe, in which there is a ſtove to make a little fire in very bad weather, to dry and warm the air in foggy, cold, or wet weather, and to prevent the froſt from entering the houſe. The fifth, ſixth, ſeventh, eighteenth, thirty-fourth, and thirty-fifth ſorts, require a greater ſhare of heat to preſerve them in winter, and ſhould be ſet in a good ſtove, and kept nearly to the degree of heat marked (upon Mr. Fowler's Botanical Thermometers) temperate. Indeed, moſt of the other ſorts may be kept in the ſame temperature of heat in winter; but then you muſt obſerve, that the greater the heat is in winter, in which you keep them, the more water they will require: and, if they are well managed in this heat, they will grow very much in winter; therefore great care muſt be taken in the ſevere cold, that it doth not enter the houſe, nor that the heat be at that time leſſened; as alſo how you begin to give them air in the ſpring; for the extreme parts of the plants will be rendered very tender, by their growing freely in winter; and the leaſt check to their growth, at that ſeaſon, is very often their deſtruction. Moſt of the African ſorts of aloes produce flowers with us annually, when grown to a ſufficient ſize, which is generally the ſecond, and ſeldom more than the third year after planting from off-ſets; but the American aloes (which, for the moſt part, produce their flower-ſtems immediately from the center of the plant) ſeldom flower till they are of a conſiderable age, and this but once during the life of the plant; for when the flower ſtems begin to ſhoot from the middle of the plant (which for the moſt part, is of a large ſize, and grows to a great height), it draws all the moiſture and nouriſhment from the leaves; ſo that, as that advances, the leaves decay; and, when the flowers are fully blown, ſcarce any of the leaves remain alive; but, whenever this happens, the old root ſends forth a numerous quantity of off-ſets for increaſe; and it is not till this time, that ſome of theſe ſorts can be increaſed, eſpecially the ſecond, third, fourth, fifth, ſixth, and ſeventh ſorts, which never produce any young plants until they flower; at which time the flower-ſtem of the ſeventh ſort is beſet with ſmall heads from bottom to top, which, being taken off, and planted, will grow as well as ſuckers from the roots. This aloe, which with us ſeldom makes a very large plant, hath yet produced flower-ſtems of a conſiderable ſize, and fifteen feet in height. The flowers are little leſs than thoſe of the large ſort. I cannot here forbear taking notice of a vulgar error relating to the large American aloe: which is, that it never flowers till it is an hundred years old; but this is a miſtake; ſince we have had ſeveral of them flower in England, ſome of which were known not to exceed fifty years old, and others which flowered many years ago, cannot be ſuppoſed to have been in England ſo long as to arrive at that age, ſince they were thought too tender for our climate at that time, when green-houſes were not known; as may be ſeen by looking into Gerrard's and Parkinſon's Herbals. Thoſe who are deſirous of having this ſort of aloe flower, may, by giving the plants large tubs for their roots to ſpread, greatly promote their growth; and, in proportion to the growing of the plants, their flowering is haſtened; for the bud being formed in the center of the plants, when the number of leaves which enfold it are thrown off, the ſtem will advance: ſo that in Spain and Portugal, where the plants grow faſt, they produce flowers in eighteen or twenty years; and in the Weſt-Indies, where they grow faſter, in ſeven or eight. The African aloes, for the moſt part, afford plenty of ſuckers, by which they are increaſed; but thoſe few that do not may be moſt of them propagated, by taking off ſome of the under leaves, laying them to dry for a week or ten days, as was directed for the off-ſets; then plant them in the ſame ſoil as was directed for them, putting that part of the leaf which did adhere to the old plant about an inch, or an inch and a half (according to the ſize of the leaf) into the earth, giving them a little water to ſettle the earth about them: then plunge the pots into a moderate hot-bed, obſerving to ſcreen them from the violence of the ſun, and give them gentle refreſhings with water. The beſt ſeaſon for this is in June, that they may puſh out heads before winter. *Miller's Dict.*

ALOES, in the materia medica, a bitter, gummy, reſinous, inſpiſſated juice; prepared from the leaves of the above ſpecies of plants. There are three different ſorts of aloes found in the ſhops, diſtinguiſhed by the names of *ſocotorine*, *hepatic*, and *caballine*.

ALOE *Socotorina.* Socotorine aloes are brought from the iſland Socotora, in the Indian ocean, wrapt in ſkins. This ſort of aloes is of a bright ſurface, and in ſome degree pellucid, in the lump; of a yellowiſh red colour, with a purpliſh caſt: when reduced into powder, of a golden colour. It is hard and friable in the winter; ſomewhat pliable in the ſummer, and ſoftens betwixt the fingers. Its bitter taſte is accompanied with an aromatic flavour, but not ſufficient to prevent its being diſagreeable: the ſmell is not very unpleaſant, and ſomewhat reſembles that of myrrh.

ALOE *Hepatica.* Hepatic, Barbadoes, or common aloes, are generally brought from Barbadoes; the beſt ſort in large gourd ſhells; an inferior kind in pots; and a ſtill worſe in caſks; and extracted from the *aloe dioſcordis et aliorum*, of Sloane. This is darker-coloured than the foregoing. It is generally drier and more compact; though ſometimes, eſpecially the caſk ſort, quite ſoft and clammy. Its ſmell is much ſtronger and more diſagreeable; the taſte intenſely bitter and nauſeous, with little or nothing of the aromatic flavour of the ſocotorine.

ALOE *Caballina.* Caballine, or horſe alloes, are prepared, probably, from the *aloe guenienſis caballina vulgari ſimilis ſed tota maculata*, and not, as is generally ſuppoſed, from the fœces of the hepatic; the difference not being in purity, but in quality. It is eaſily diſtinguiſhed from both the foregoing by its ſtrong rank ſmell: in other reſpects it agrees pretty much with the hepatic; and is, not unfrequently, ſold in its place. Sometimes it is prepared ſo pure and bright as ſcarce to be diſtinguiſhable by the eye, even from the ſocotorine; but its offenſive ſmell readily betrays it: and if this alſo ſhould be diſſipated by art, its wanting the aromatic flavour of the finer aloes will be a ſufficient criterion.

Aloes is a ſtimulating cathartic bitter; taken in ſufficient doſes to purge effectually, as two ſcruples or a dram, it occaſions commonly a great irritation about the anus, and ſometimes a diſcharge of blood. In ſmaller doſes, of ten or twelve grains, repeated once or twice a day, it not only evacuates the firſt paſſages, but attenuates and diſſolves viſcid humours in the remoter parts; warms the habit, quickens the circulation, and promotes the menſtrual and hæmorrhoidal fluxes: its continued uſe renders the blood ſenſibly more fluid, as appears on venæſection. For a time, in theſe ſmall doſes, it does not act by ſtool; but at length it produces a gentle looſeneſs, of longer continuance than that occaſioned by moſt other purgatives: hence its utility in habitual coſtiveneſs. This ſtimulating cathartic is particularly adapted to perſons of a phlegmatic temperament and ſedentary life, to cachectic indiſpoſitions, and oppreſſions of the ſtomach by viſcid crudities contracted from irregularity: in dry bilious habits it is often injurious, immoderately heating the blood, or inflaming the bowels. This bitter juice is accounted deſtructive to worms, (or to the matter which favours their production) whether taken internally, or applied in plaiſters to the umbilical region. It is powerfully antiſeptic; and commonly made an ingredient in tinctures and balſams for cleanſing and healing wounds or putrid ſores.

ALOETICS, a general name given to all medicines, whoſe baſis or principle ingredient is aloes.

ALPHA, the name of the firſt letter of the Greek alphabet, anſwering to our A. As a numeral it ſtands for one, hence alpha and omega, being the firſt and laſt letters in the Greek alphabet, are uſed to ſignify the eternity of God.

ALPHABET, the natural or cuſtomary ſeries of the ſeveral letters of a language.

The word is compounded of *alpha* and *beta*, the firſt and ſecond letters of the Greek alphabet. The number of letters is different in the alphabets of different languages. The Engliſh alphabet contains 24 letters excluſive of the *j* and *v* conſonant; the French 23; the Hebrew, Chaldee, Syriac, and Samaritan, 22 each; the Arabic 28; the Perſian 31; the Turkiſh 33; the Georgian 36; the Coptic 32; the Muſcovite 43; the Greek 24; the Latin 22; the Sclavonic 27; the Dutch 26; the Spaniſh 27; the Italian 20; the Ethiopic and Tartarian, each 202; the Indians of Bengal 21; the Barameſe 19. The Chineſe have, properly ſpeaking, no alphabet: their letters are words, or rather hieroglyphics, amounting to about 80,000.

ALPHABET, a table of the uſual letters of the alphabet, with the correſpondent ſecret characters, and other blank ſymbols intended to render the writing more difficult to be decyphered.

ALPHABET, among merchants, a kind of index, with the twenty-four letters in their natural order, in which are written the names of thoſe who have open accounts, referring to the folios of the ledger.

ALPHABETICAL, belonging to, or placed in the order of, the alphabet.

ALPHONSIN, in ſurgery, an inſtrument for extracting bullets out of gunſhot wounds.

* ALPS, a large chain of mountains remarkable for their extent and height. They begin on the ſide of France, towards the Mediterranean Sea, near Monaco, between the ſtate of Genoa and Nice, and terminate in the gulph of Cornaro, which makes part of the gulph of Venice. They bound Italy on the weſt and north, and ſeparate it from France and Germany. The mountains are very broad, for they contain all the county of Nice, and Upper Provence, almoſt all Dauphiny, Savoy, le Valais, Swiſſerland, the country of the Griſons, Tirol, the biſhoprics of Trent and Brixen; the archbiſhopric of Saltzburg, Carinthia, and Carniola. Theſe mountains were formerly divided into ſeveral parts, called 1. The Maritime Alps, which extend from Monaco to the Mediterranean Sea, as far as mount Viſo, where is the ſource of the Po. 2. The Cottian Alps, which extend from mount Viſo to mount Cenis, between Dauphiny and Piedmont. 3. The Greek Alps, which reach from mount Cenis, between Savoy and Piedmont, as far as St. Bernard. 4. The Pennine Alps: theſe reach into the country of the Valais, between Great St. Bernard and mount St. Gothard; 5. The High Alps: it is called St. Gothard, and is between the Valais, Swiſſerland, the Griſons, and the Milaneſe. 6. The Lepontian Alps, on the ſouth of the High Alps, between the ſources of the Rhine and the Lake Major. 7. The Rhetic Alps, on the eaſt-ſide of the High Alps, between the Griſons and the Valtelins. 8. The Tridentine Alps, between Tirol and the biſhopric of Trent, on the eaſt-ſide of the Rhetic Alps. 9. The Noric Alps, to the eaſt of the Tridentine, between the archbiſhopric of Straſburgh and the ſtate of Venice. 10. The Carnic Alps, which reach from the ſource of the Trajamento to that of the Liſonzo. 11. The Julian Alps: theſe are moſt eaſterly of all, and reach from the river Liſonzo to the gulph of Cornero. In this part are the Monti della Vena, which lies to the ſouth of the lake Czirnics, and the Monti de Charſo, which are towards the county of Gorizs, and the city of Trieſt. Theſe are ſo called from Julius Cæſar, who was the firſt that lead an army over them.

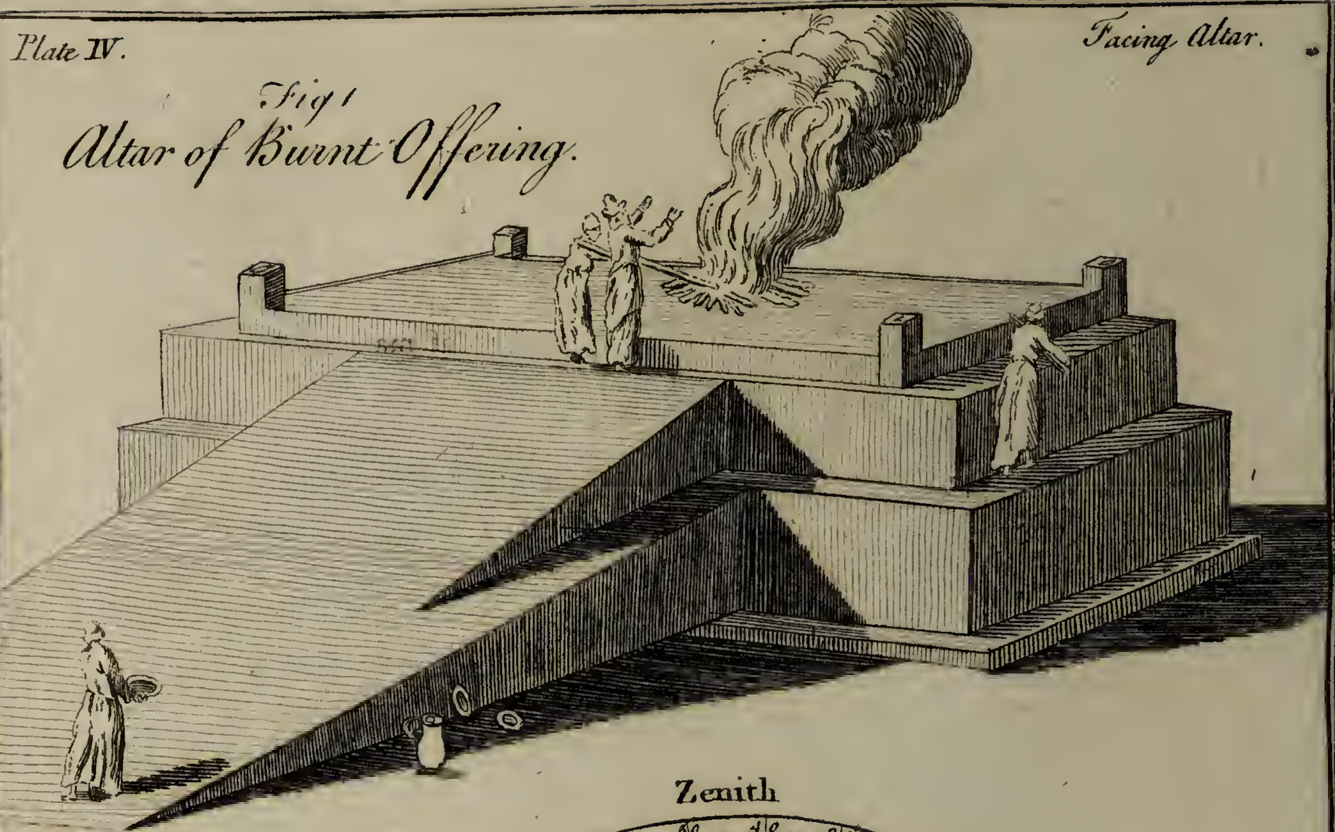
ALSINE, chickweed, in botany, a ſmall, creeping, juicy herb; annual, yet common in all times of the year in ſhady cultivated ground.

Plate IV.

Facing Altar.

Fig 1

Altar of Burnt Offering.



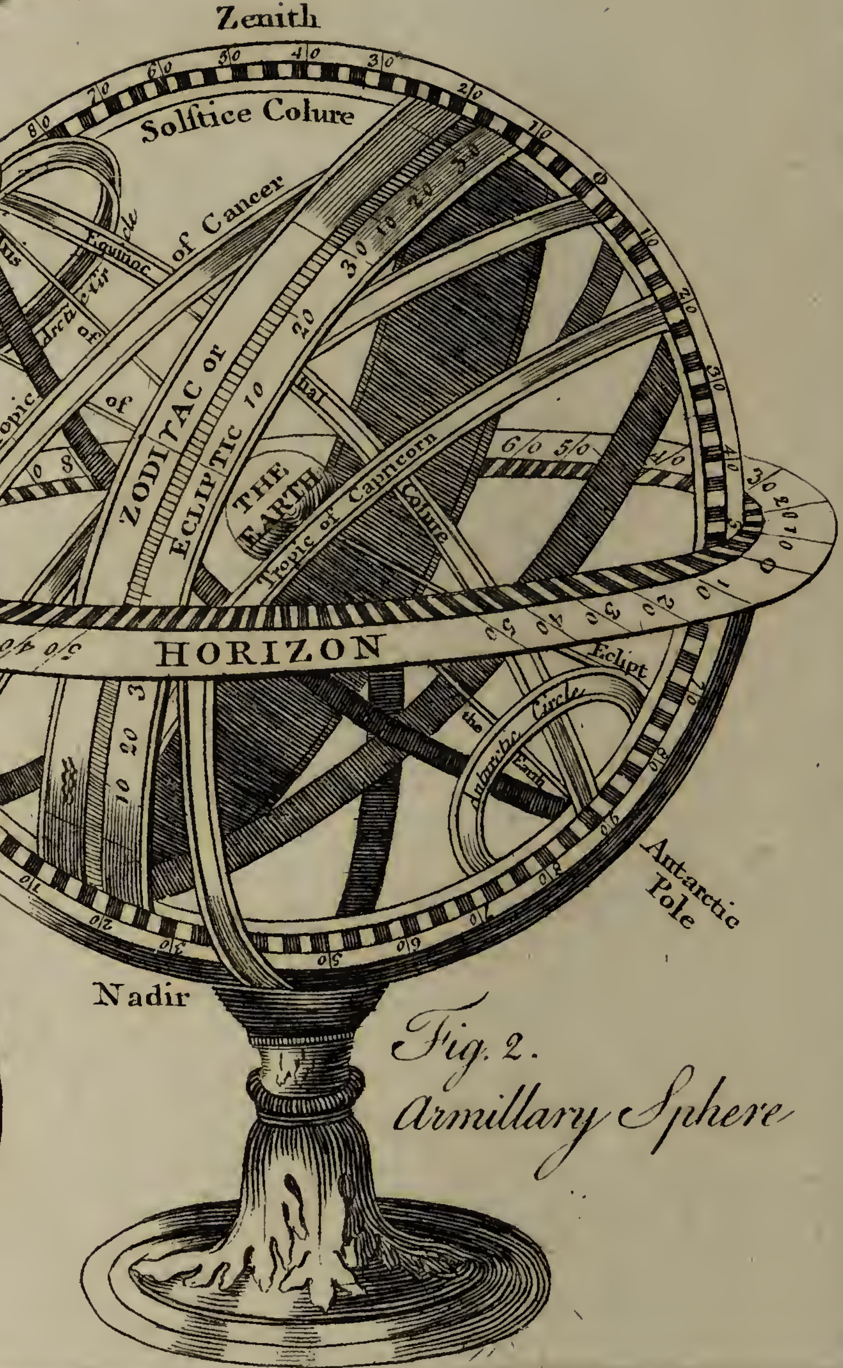


Fig. 2.

Armillary Sphere

Amaranta

Fig. 3

ALTAR, a place upon which ſacrifices or offerings, were anciently made to ſome deity. The Scripture in ſome places ſpeaks of altars erected by the patriarchs, without deſcribing the form or matter of them. The altar which Jacob ſet up at Bethnel, was a ſtone which had ſerved him for a pillow. Gideon ſacrificed upon nothing better than a ſtone which was before his houſe. The altar which Moſes enjoined Joſhua to build upon mount Ebal, was to be of unpoliſhed ſtone; and it is very probable, that thoſe which were built afterwards by Samuel, Saul, and David, were of the ſame ſtructure. The altar which Solomon erected in the temple was of braſs, but filled, as it is believed, with rough ſtones. Laſtly, that which was built at Jeruſalem by Zerubbabel, and other Jews who returned from Babylon, was only of rough ſtones: nor was that which the Maccabees rebuilt any better.

ALTAR *of Incenſe.* This was a ſmall table of ſhittim-wood, covered with plates of gold, of one cubit in length, another in width, and two in height. At the four corners of it were four kinds of horns, and all round a little border and crown over it.

Altar, or table, for the ſhew-bread, was a ſmall table of ſhittim-wood, covered with plates of gold, having a little border round it, adorned with ſculpture. It was two cubits long, one cubit wide, and one and a half in height. It was placed in the Holy. Upon this table, every ſabbath-day, were put twelve loaves with ſalt and incenſe.

ALTAR *of Burnt-offerings.* This was a kind of coffer of ſhittim-wood, covered with braſs plates. It was five cubits ſquare, and three in height. At the four corners of the altar there was an appearance as it were of four horns, covered with the ſame metal as the reſt of the altar. Within the depth or hollow of it was a grate of braſs, on which the fire was made; through this fell the aſhes in proportion as they increaſed upon the altar, and were received below within a pan which was placed under it. At the four corners of this grate were four rings, and four chains, which kept it up at the four horns of the altar abovementioned. As this altar was portable, Moſes had rings made and faſtened to the ſides of it, into which were put ſtaves of ſhittim-wood, overlaid with braſs, by the help whereof it was removed from place to place. Such was the altar of burnt-offerings belonging to the tabernacle erected by Moſes in the wilderneſs: but in Solomon's temple it was much larger. The altar of burnt-offerings, according to the rabbins, was a large maſs all built of rough and unpoliſhed ſtones, the baſis whereof was thirty-two cubits, or forty-eight feet ſquare. See Plate IV. *fig.* 1.

The heathens made their altars at firſt only of turf; but afterwards they were made of ſtone, of marble, of wood, and even of horn, as that of Apollo in the iſland of Delos. The figure of them, as well as the materials, was different; they were always turned towards the eaſt, and ſtood lower than the ſtatues of the gods, which were placed upon the baſes above the altar, which was generally adorned with leaves and flowers; thoſe of Apollo with laurel; thoſe of Hercules with poplar; Jupiter's with oak; Venus's with myrtle; and thoſe of Minerva with olive. The altars were uſually conſecrated with oil, which was poured upon them.

The height of altars differed, according to the different gods to whom they were conſecrated: for the Celeſtial Gods, had their altars raiſed to a very great height above the ground. To the terreſtrial gods and heroes, they ſacrificed upon altars almoſt cloſe to the ground; and they dug a hole in the earth for thoſe of the infernal gods. Before temples were in uſe, altars were erected ſometimes in groves, ſometimes in the highways, and ſometimes on the tops of mountains: and it was cuſtomary to engrave upon them the name, a proper enſign, and character of the deity to whom they were dedicated.

ALTAR, the communion table in the reformed churches.

ALTERATIVES, or ALTERATIVE medicines, ſuch medicines as correct the bad qualities of the animal fluids, without occaſioning any ſenſible evacuation.

ALTERNATE, in a general ſenſe, ſignifies a term applied to ſuch perſons or things, as ſucceed each other by turns.

ALTERNATE, in botany, implies ſuch a diſpoſition of the leaves of a plant, that the firſt on one ſide of a branch ſtands higher than the firſt on the other ſide; the ſecond the ſame, and ſo on to the top.

ALTERNATE, in heraldry, is ſaid with regard to the ſituation of the quarters. Thus the firſt and fourth quarters, and the ſecond and third, are uſually of the ſame nature, and are thence called alternate quarters.

ALTERNATE *Angles,* in geometry, are thoſe acute or obtuſe angles which are oppoſite to each other, and formed by a right line cutting two parallel right lines.

Alligation ALTERNATE. See Alligation.

ALTERNATE *Ratio*, or *Proportion*, is where the antecedent of the one ratio is to its conſequent, as the antecedent of another to its conſequent; the very ſame ratio, in this caſe, holding alternately in reſpect of the antecedents to each other, and the conſequents to each other.

Thus, if A : B : : C : D; then alternately A : C : : B : D. See the article Proportion.

ALTERNATION, a ſucceſſion in terms.

This is alſo called permutation, &c. and is eaſily found by a continual multiplication of all the numbers, beginning at unity. Thus, if it be required to know how many changes or alterations can be rung on ſix bells, multiply the numbers 1, 2, 3, 4, 5, 6, continually one into another, and the laſt product gives the number of changes, in this caſe, 720. See Change.

ALTERNATIVE, in a general ſenſe, implies nearly the ſame as alternate. See Alternate.

ALTHÆA, *Marſhmallow*, in the materia medica. It grows wild in marſhes, and other moiſt places, though frequently cultivated in gardens. It is perennial, and flowers from June to near the end of ſummer.

Of all the mucilaginous vegetables, marſhmallow-root is of the moſt general uſe, for obtunding and incraſſating acrimonious thin fluids, in tickling coughs from defluxions on the fauces and lungs, in hoarſeneſs, eroſions of the ſtomach and inteſtines, difficulty and heat of urine, and for lubricating and relaxing the paſſages in nephritic and calculous complaints. The root is ſometimes given in powder, from a ſcruple to a dram or two, either by itſelf, or in conjunction with other materials of ſimilar intention, as gum tragacanth, ſtarch, &c. It is rather too bulky, however, for this form; and may in moſt caſes, be taken better in that of an infuſion or decoction, ſweetened with liquorice: an ounce of the dry root is ſufficient for a quart or three pints of water, a large proportion rendering the liquor diſagreeably ſlimy. A ſyrup, made by boiling a pound of the freſh roots in a gallon of water till half the liquor is waſted, preſſing out the decoction, and after ſettling for a night, boiling it down with four pounds of fine ſugar till the weight of the whole is ſix pounds, is kept in the ſhops, and employed occaſionally in ſome diſorders of the breaſt, and for ſweetening emollient decoctions in nephritic caſes. *Lewis's Hiſtory of the Materia Medica.*

*ALTHÆA, in fabulous hiſtory, the wife of Æneas, king of Calidonia, and mother of Meleager, who threw into the fire the fatal brand, on which, by the decree of the Deſtinies, the life of her ſon depended.

ALTIMETRY, the art of meaſuring altitudes or heights, acceſſible or inacceſſible. See Altitude.

ALTITUDE, *Altitudo*, in geometry, the third dimenſion of body, conſidered with regard to its elevation above the ground; called alſo height or depth.

ALTITUDE *of a figure*, is the diſtance of its vertex from its baſe, or the length of a perpendicular let fall from the vertex to the baſe.

ALTITUDE, in optics, the angle ſubtended between a line drawn from the eye, parallel to the horizon, and a viſual ray emitted from an object to the eye.

ALTITUDE *of the Eye*, in perſpective, a right line let fall from the eye perpendicular to the geometrical plane.

ALTITUDE, in aſtronomy, the diſtance of the ſun or ſtar from the horizon. This altitude is meaſured by an arch of a vertical circle intercepted between the point where the ſun or ſtar then is, and the horizon.

Apparent ALTITUDE, of any heavenly object, is the arch of a vertical circle intercepted between the ſenſible horizon and the centre of the object.

True ALTITUDE is the arch of a vertical circle comprehended between the center of the object and the rational horizon.

The true altitudes of the ſun and planets differ but very little from their apparent altitudes; becauſe of their great diſtances from the center of the earth, and the ſmallneſs of the earth's ſemi-diameter, when compared thereto: but the diſtance between the true and apparent altitude of the moon is very conſiderable, it ſometimes amounting to upwards of 50 minutes.

Meridian ALTITUDE *of the Sun, Planet*, or *Star*, an arch of the meridian intercepted between the horizon and the center of the object.

ALTITUDE *of the Pole* is the height of the pole above the horizon, or an arch of the meridian intercepted between the pole and the horizon.

The altitude of the pole is always equal to the latitude of the place, and the diſtance of the pole from the zenith of the place

PLATE VI

Facing Altitude

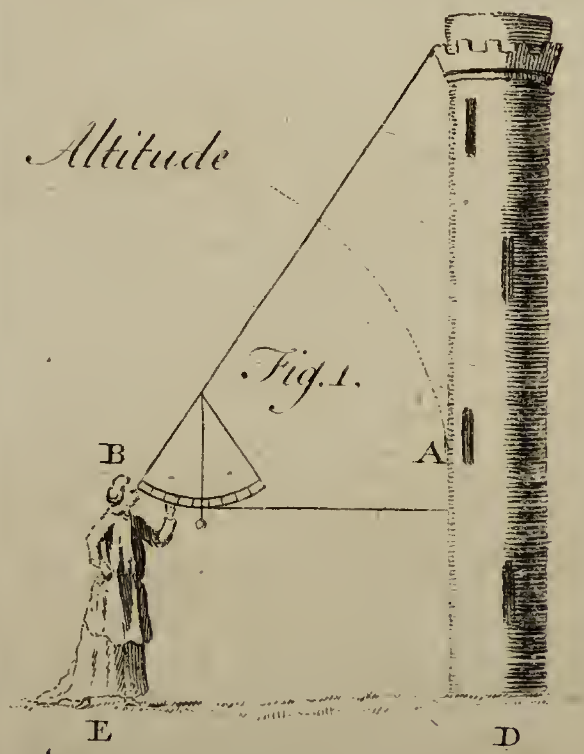


Fig. 1.

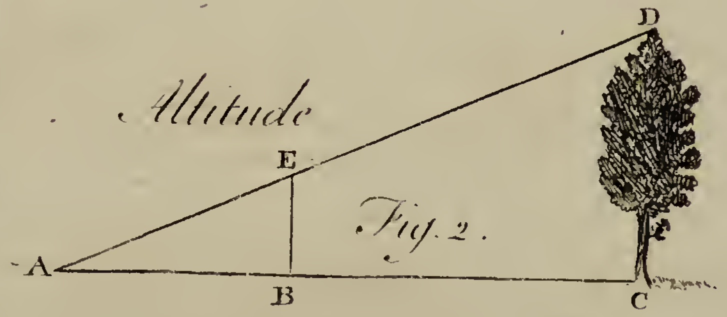


Fig. 2.

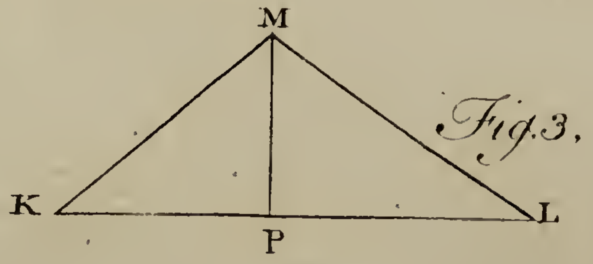


Fig. 3.

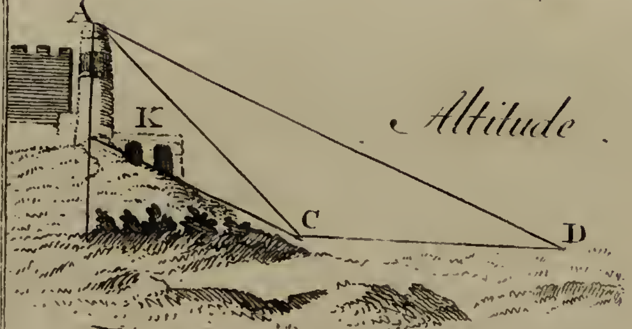


Fig. 4

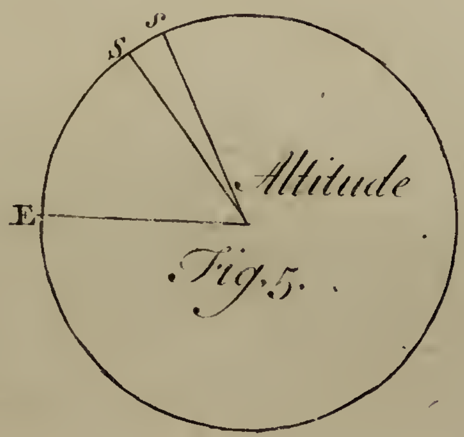


Fig. 5.

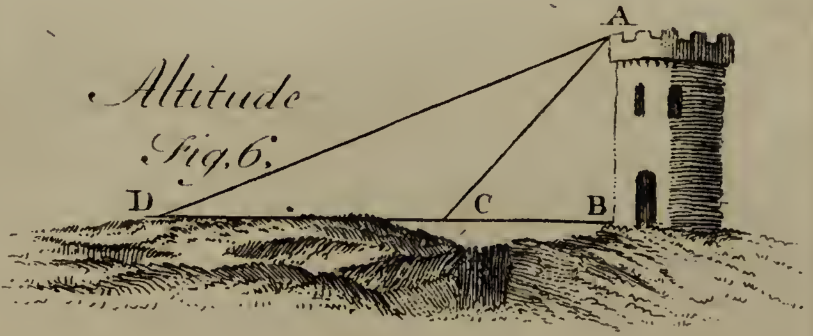


Fig. 6.

place, is always the complement of the latitude thereof.

ALTITUDE *of the Equinoctial* is the elevation of the equinoctial above the horizon, and is always equal to the complement of the latitude, or the complement of the altitude of the pole.

Refraction of ALTITUDE is an arch of a vertical circle, as S *s* (plate VI. *fig.* 5.) whereby the altitude S E, of a ſtar, or other body, is increaſed by means of the refraction.

ALTITUDE, in coſmography, is the perpendicular height of an object, or its diſtance from the horizon, upwards.

The altitudes of objects, ſituated on the ſurface of the earth, are either acceſſible or inacceſſible.

Acceſſible ALTITUDES *of an Object*, is that whoſe baſe you can have acceſs to, i. e. meaſure the neareſt diſtance between your ſtation and the foot of the object on the ground.

To take an acceſſible ALTITUDE, let C (plate VI. *fig.* 1.) repreſent a tower ſtanding upon level ground, whoſe height is required; with a chain or ſtaff of a known length, meaſure the diſtance between your ſtations at E and D, the foot of the tower, which ſuppoſe equal to 160 feet; then holding the quadrant in an horizontal poſition, look through the ſights at the tower, and where the viſual ray terminates make a mark, as at A, which will ſhew the height of the eye above D, the bottom of the tower; then elevate the inſtrument, till C, the top of the tower, is ſeen through the ſights. Now it is plain that the triangle B A C is formed by theſe three lines, viz. B A the diſtance of the obſerver's eye from the tower, A C the height of the tower above his eye, and B C a line drawn from his eye to the top of the tower. In this triangle the angle A is a right one by the ſuppoſition the angle B is found by the quadrant, which ſuppoſe 70°, and the meaſure of one ſide, B A, is known, viz. 160 feet; whence A C may be eaſily found: for if B A be made radius, then A C will be the tangent of the angle C B A. Therefore, as radius: A B :: tang ang. A B C : A C=440; and conſequently, if A D, the height of the obſerver's eye from the ground, be added, you will have the whole height of the tower C D.

An acceſſible ALTITUDE may alſo be meaſured geometrically, without the help of the quadrant, in the following manner. Suppoſe it were required to find the height of the tree C D, (plate VI. *fig.* 2.) plant a ſtaff, as E B, of a known length perpendicularly in the ground; then, lying proſtrate on your face, move yourſelf forwards or backwards till the top of the ſtaff E be in a right line with that of the tree at D: meaſure the diſtance from the eye at A to the ſtaff at B, and alſo from A to the foot of the tree at C: then, becauſe the triangles A B E and A C D are ſimilar, it will be, as A B : A C :: B E : C D, the height of the tree required.

Inacceſſible ALTITUDE *of an Object*, is that when the foot or bottom cannot be approached by reaſon of ſome impediment.

To take an inacceſſible ALTITUDE; let A B (plate VI. *fig.* 6.) be a tower, whoſe height is required: to do this make choice of two ſtations, D and C, in the ſame right line with B; then meaſure the ſtationary diſtance D C, and with a quadrant, or other proper inſtrument, take the angles D and C, as before in acceſſible altitude. Now the two viſual lines D A and C A, together with the diſtance D C, from an oblique-angled triangle, wherein there are given the three angles D, A C D, and D A C; for the difference of the obſerved angles is equal to the angle C A D. Therefore ſay, as the ſine of the angle C A D is to C D, ſo is the ſine of the angle A D C to A C. Then, radius : A C :: ſine < A C B : A B, the height of the tower required.

To find the inacceſſible ALTITUDE *of an Object ſtanding upon an Hill.* Let A K (plate VI. *fig.* 4.) be a tower upon a hill, whoſe height is required to be found on the plane at the foot of the hill: firſt make choice of two ſtations, as D, C, in a right line with the object, and at D take the angle A D B, then meaſure the diſtance D C, and at C take the angles A C B and K C B. Now, in the oblique triangle A D C, we have the baſe D C and the angles given, to find A C, (as in the foregoing propoſition) which being obtained, we ſhall have radius : A C :: ſine < B A C : B C, whence A B may be found: laſtly, as radius : tang. of the obſerved angle K C B :: B C : B K, which ſubtracted from A B, leaves A K the height required.

The method of taking conſiderable terreſtrial altitudes, of which thoſe of mountains are the greateſt, by means of the barometer, is very eaſy and expeditious. This is done by obſerving, on the top of the mountain, how much the mercury has fell below what it was at the foot of the mountain. See the article BAROMETER.

ALUM, *Alumen*, in natural hiſtory, a ſemi-tranſparent, auſtere, ſtyptic ſalt, compoſed of the vitriolic acid, and a certain earth, found in all the argillaceous foſſils hitherto examined. The greateſt quantities of this ſalt are artificially produced from different kinds of minerals, whoſe nature and compoſition are little known.

The reddiſh Roman alum is prepared from a reddiſh ſtone found at the bottom of the hill Tolfa, near Civita Vecchia, in the Eccleſiaſtical State. In Sweden and ſome parts of Bohemia, alum is made from pyritæ and other ores; in England, at Altſattel, and ſundry other places, from bituminous minerals of the pit-coal kind; at Solfatara near Naples, from a whitiſh earth; in Miſnia, from a blackiſh one; at Leowenberg near Freyenwalde, from a reddiſh one; and from different minerals at Saalfeld, Reichenbach, Leuſersdorff, Suſersdorff, Eliard, Schwentzel, Duben, &c. The pureſt and moſt perfect alum ore is the reddiſh ſtone of Tolfa: this is ſaid to yield alum without any additional matter, though not without artificial management; the alum obtained from it is tinctured with the reddiſh colour of the ſtone. In its natural ſtate it gives no marks of alum; and, if expoſed to the air, it continues a hard inſipid ſtone. Calcined or roaſted, and then laid for a time in the air, it becomes by degrees aluminous, and gives out its alum on being boiled in water. This alum the Italians call *alum di rocca*, alum made from a ſtone or rock; among us, the name *alumen rupeum*, or rock alum, is often applied to the larger cryſtalline maſſes, whatever ſubject they have been prepared from. The aluminous pyritæ and bitumen require no calcination, unleſs they greatly abound with ſulphur. Theſe minerals, at firſt taken out of the earth, are compact, and often bright and glittering: they have no manner of taſte, and diſcover no mark of their holding any thing ſaline; the vitriolic acid being as yet blended with an inflammable matter, by which its acidity and all its ſaline characters are deſtroyed. On bare expoſure to the open air, the inflammable principle is diſſipated, and the acid is combined with the aluminous earth into a perfect alum, the ſtone at the ſame time falling into powder. The mineral, thus impregnated with alum, is elixated or boiled with water; the liquor boiled down, commonly with an addition of urine, or alkaline ley, or both together; the clear part poured off and ſet to ſhoot: the cryſtals if not ſufficiently pure, diſſolved again, boiled down with a little more alkali, and chryſtallized afreſh. The uſe of the urine or alkali ſalt is partly to clarify the liquor, and precipitate ſuch metallic parts as it may contain, and partly to give a body to the alum, and promote the cryſtallization; the liquor of itſelf would not ſhoot, but either continue fluid, or if further evaporated, would yield only an unctuous maſs. Alkaline ſalts are found to anſwer better than urine, and hence are now in moſt places alone made uſe of, though ſome ſtill retain urine from prejudice and cuſtom. The alkali precipitates not only metallic matters, but a groſs earth which would injure the tranſparency of the ſalt, and often alſo a part of the aluminous earth itſelf, which falls to the bottom in form of a fine white meal, called at the works alum meal; this is to be rediſſolved and cryſtallized afreſh. The mineral remaining after elixation, expoſed for ſome years to the air, becomes impregnated with alum again; in ſome places this proceſs is repeated a third and fourth time.

The alum ſlates near York, in England, are conſiderably ſulphureous; by lying long in the air, they become aluminous of themſelves; but to promote this effect they are uſually calcined. The boilers are large leaden pans, nine feet long, five feet broad, and two and a half in depth; the liquor is clarified and diſpoſed to cryſtallize by the addition of ſoda, there called kelp, and of urine. The cryſtallization of alum is uſually performed in large ſtrong wooden caſks, whoſe ſtaves and hoops are all marked with numbers, that they may be readily put together; in ſome places iron veſſels are uſed. The caſks being filled with the alum liquor evaporated to a due conſiſtence, and ſet in a cold place, the alum gradually ſhoots into large cryſtals about the ſides; the liquor in the middle is then let off by a cock in the bottom, the head of the caſk knocked out, and the veſſel turned upſide down, for the more effectual draining off of the remaining liquid. The cryſtals are then dried in a warm ſtove, and packed up in caſks; and the mother-ley, or uncryſtallized liquor, mixed with freſh aluminous leys. Alum requires about ten times its weight of water to diſſolve in. The ſolution, if the alum was pure, makes no change in the colour of ſyrup of violets; but the common ſorts change the ſyrup green, by virtue of the alkaline ſalt employed in their preparation. Fixed alkalies, volatile alkalies, and borax, added to ſolutions of alum, precipitate the earth. Its taſte is nauſeouſly ſweetiſh and aſtringent. In cryſtallization, it ſhoots into large angular maſſes, conſiſting generally of eleven planes, five of which are hexangular and ſix quadrangular. *Burnt* ALUM is nothing more than alum expoſed to the action of the fire; by which means it liquefies, and boils up like green vitriol; and when its phlegm is evaporated, forms a white ſpongy brittle maſs.

ALUM *Water*, a compoſition uſed by thoſe who colour prints, &c. and made in the following manner:

Boil three ounces of alum, in a quart of rain or river water, till the ſalt is diſſolved. Then take it from the fire, and after ſtanding twenty-four hours to ſettle, pour off the clear liquor for uſe. With this water they waſh their prints to prevent the colours from ſinking into the paper, and give them a brightneſs which they would otherwiſe want.

ALUMINOUS, an epithet applied to ſuch things as partake of the nature or properties of alum.

ALUMINOUS *Waters*, thoſe impregnated, either by nature or art, with the virtues of alum. The ſpa at Scarborough is ſaid to be of the former kind.

ALYSOIDES, in botany, a diſtinct genus of plants, with cruciform flowers, and elliptical fruit, divided by an intermediate membrane into two cells, which contain a conſiderable number of ſmall roundiſh ſeeds.

ALYSSON, or ALYSSUM, in botany, the name of a genus of plants called in Engliſh mad-wort: This plant is ſaid to be aperitive and diaphoretic; but is ſeldom uſed at preſent.

AMAIN, in ſea language, ſignifies at once. Thus to lower amain, is to lower at once, or let go the fall of the tackle.

AMALGAMA, in chemiſtry, a maſs of mercury united and incorporated with ſome metal.

AMALGAMATION, in chemiſtry, the operation of making an amalgama, or mixing quickſilver with ſome metal. Trituration is often ſufficient to make an amalgama; but a proper degree of heat is alſo of very conſiderable uſe. Mercury, amalgamated with a metal, gives it a conſiſtence more or leſs ſoft, and even fluid, according to the greater or ſmaller proportion of mercury employed. All amalgamas are ſoftened by heat, and hardened by cold.

Mercury is very volatile; vaſtly more ſo than the unfixed metals: moreover, the union it contracts with any metal is not ſufficiently intimate to entitle the new compound reſulting from the union to all the properties of the two ſubſtances united; at leaſt with regard to their degree of fixity and volatility: from all which it follows, that the beſt and ſureſt method of ſeparating it from metals diſſolved by it, is to expoſe the amalgama to a degree of heat ſufficient to make all the quickſilver ariſe and evaporate; after which the metal remains in the form of a powder, and being fuſed recovers its malleability.

If it be thought proper to ſave the quickſilver, the operation muſt be performed in cloſe veſſels, which will confine and collect the mercurial vapours.

Of all metals gold unites with mercury with the greateſt facility; next to that ſilver; then lead, tin, and every metal, except iron and copper, the laſt of which incorporates with quickſilver with great difficulty, and the former ſcarce at all.

The amalgama of gold is thus made: take a dram of the regulus of gold, beat it into very thin plates, and upon theſe, heated in a crucible red-hot, pour an ounce of quickſilver, ſtir the matter with an iron rod, and when it begins to fume, caſt it into an earthen pan filled with water, and it will coagulate and become tractable. Gold will retain about thrice its weight of mercury.

To make an amalgama of lead: melt clean lead in an iron ladle, add to it an equal weight of melted mercury, ſtir them together with an iron rod; then let them cool, and you will have an uniform maſs of a ſilver colour, ſomewhat hard, but growing ſofter and ſofter by trituration. Put this maſs into a glaſs mortar, grind it, and mix with it any quantity of mercury at pleaſure, and it will unite with it, as ſalt with water.

The amalgama of tin is made exactly in the ſame manner, and this alſo may be diluted by the addition of mercury.

To have an amalgama of copper: take a ſolution of pure copper made in aquafortis, ſo ſtrong that the aquafortis could diſſolve no more of the metal; dilute the ſolution with twelve times its quantity of fair water; heat the liquor, and put it into poliſhed plates of iron, and the copper will be precipitated in a powder to the bottom, while the iron will be diſſolved: proceed thus till all the copper is fallen; pour off the liquor, waſh the powder with hot water, till it becomes perfectly inſipid; then dry the powder, and grind it in a glaſs mortar with an equal weight of hot quickſilver, and they will unite into an amalgama, which will alſo receive a further addition of mercury. An amalgama ma of copper in any other way is very difficult to make.

Pure ſilver, precipitated from aquafortis, may in the ſame manner be made into an amalgama.

From theſe operations we may perceive that the making of amalgamas is the foundation of the art of gilding, both of gold and ſilver; and that metals, by that art, may be mixed, confounded, and ſecretly concealed among one another.

AMALTHEA, in mythology, the goat that ſuckled Jupiter, which was afterwards placed by that god among the ſtars.

AMARANTA, or AMARANTE, an order of knighthood, inſtituted in the year 1653, by Chriſtina, queen of Sweden, in memory of a maſquerade, in which ſhe had aſſumed that name, which ſignifies unfading, or immortal. See plate IV. *fig.* 3.

AMARANTHUS, in botany, the name of a genus of plants, ſometimes called prince's feather.

Amaranthus muſt be ſown on a good hot-bed, in February, or the beginning of March at fartheſt; and in about a fortnight's time the plants will riſe; when you muſt prepare another hot-bed, covered with good light rich earth, about four inches thick; then raiſe up the young plants with your finger, ſo as not to break off the tender roots, and prick them into your new hot-bed, about four inches diſtance every way; give them a gentle watering to ſettle the earth to their roots; but, in doing this, be very cautious not to bear the young plants down to the ground by haſty watering, which rarely riſe again, or at leaſt ſo as to recover their former ſtrength in a long time, but very often rot in the ſtems, and die quite away. The amaranthus tricolor and bicolor muſt be kept longer under the frames than the cock's combs; and, in order to have them very beautiful, it will be proper to make a freſh hot-bed in a glaſs-caſe; or, where ſuch a conveniency is wanting, to erect ſome of the lights which were placed over cucumbers, round an hot-bed, and cover thoſe with the ſame lights on the top, ſo as to reſemble a glaſs-ſtove. On this hot-bed, you ſhould place your amaranthus at ſuch a diſtance from each other, as to allow them room to ſpread; obſerving to refreſh them often with water, and in warm weather let them have plenty of freſh air. With this management the plants may be raiſed five or ſix feet high, and their leaves will come to the moſt beautiful colours; after which they may be expoſed to the open air, and removed to adorn the ſeveral parts of the garden. *Miller's Dict.*

*AMAZONS, a nation of female warriors, whoſe exiſtence has been eſteemed merely fabulous by ſeveral; while others maintain, that their exiſtence is ſufficiently proved by the teſtimony of ſuch of the hiſtorians of antiquity as are moſt worthy of credit, by the monuments which many of them have mentioned, and by medals, ſome of which are ſtill remaining, and that there is not the leaſt room to believe that what is ſaid of them is fabulous. The Scythians had a great part of Aſia under their dominion upwards of four hundred years, till Ninus, the founder of the Aſſyrian empire, conquered all the countries ſubject to the Scythians. After his death, which happened about the one thouſand one hundred and fiftieth year before the Chriſtian æra, and that of Semiramis and their ſon Ninias, Ilinus and Scolopites, princes of the royal blood of Scythia, were driven from their country by other princes, who, like them, aſpired to the crown. They departed with their wives, their children, and their friends, and followed by a great number of young people of both ſexes, paſſed into Aſiatic Sarmatia, beyond mount Camaſſus, where they formed an eſtabliſhment ſword in hand, ſupplying themſelves with the riches they wanted, by making excurſions into the countries bordering on the Euxine Sea. The people of thoſe countries, exaſperated by the incurſions of their new neighbours, united, ſurpriſed, and maſſacred the men. The women then reſolving to revenge their death, agreed to form a new kind of government, to chooſe a queen, enact laws, and maintain themſelves without men, even againſt the men themſelves. They had no ſooner formed their reſolution, than they prepared to execute it, and exerciſed themſelves in all military operations. They ſoon ſecured the peaceable poſſeſſion of the country; and not content with ſhewing their neighbours that all their efforts to drive them thence, or to ſubdue them, were ineffectual, they made war upon them, and extended their own frontiers. They had hitherto made uſe of the inſtructions and aſſiſtance of a few men that remained in the country, but finding at length that they could ſtand their ground, and aggrandize themſelves without them, they killed all thoſe whom flight or chance had ſaved from the fury of the Sarmatians, and for ever renounced marriage, which they now conſidered as an inſupportable ſlavery. But as they could only ſecure the duration of their new kingdom

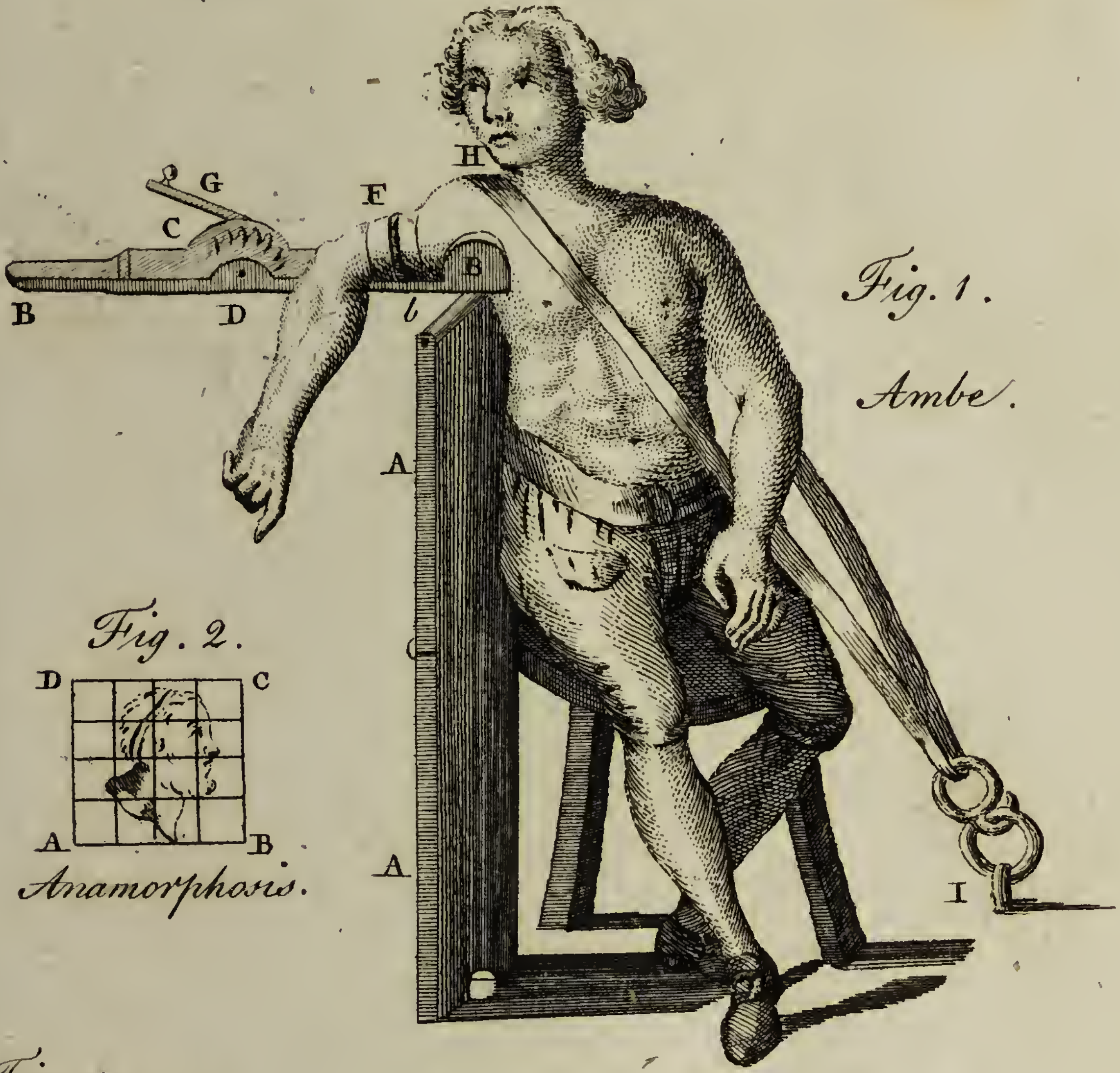


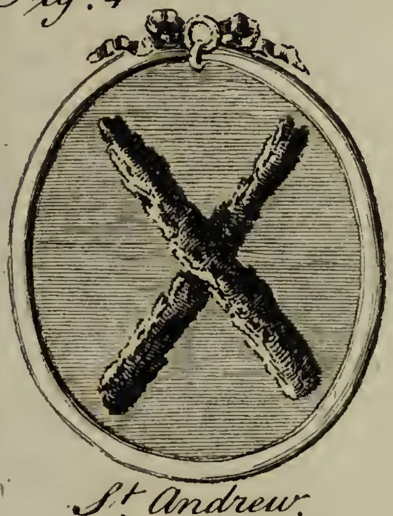
Fig. 1.

Ambe.

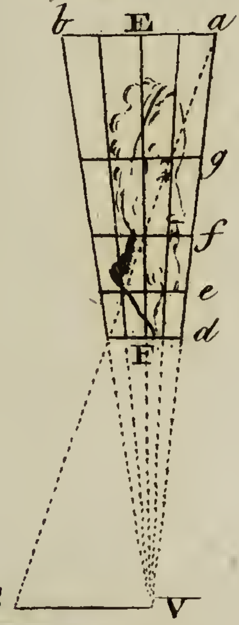
Fig. 2.

Anamorphosis.

Fig. 4



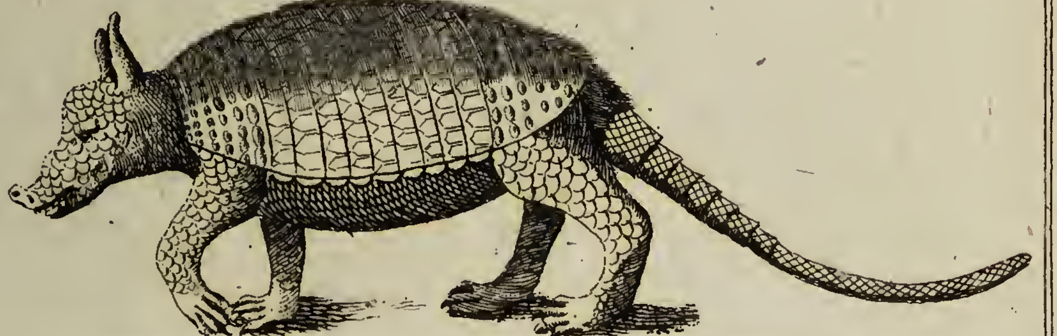
S^t. Andrew.



Anamorphosis.

Fig. 3.

Fig. 5. Armadillo.



kingdom by propagation, they made a law to go every year to the frontiers, to invite the men to come to them, and to deliver themſelves up to their embraces, without choice on their part, or the leaſt attachment, and to leave them as ſoon as they were pregnant. All thoſe whom age rendered fit for propagation, and were willing to ſerve the ſtate by breeding girls, did not go at the ſame time in ſearch of men; for in order to obtain a right to promote the multiplication of the ſpecies, they muſt firſt have contributed to its deſtruction, nor was any thought worthy of giving birth to children till ſhe had killed three men. If from this commerce they brought forth girls, they educated them; but with reſpect to the boys, if we may believe Juſtin, they ſtrangled them at the moment of their birth: according to Diodorus Siculus, they twiſted their legs and arms, ſo as to render them unfit for military exerciſes; but Quintius Curtius, Philoſtrates, and Jordarus, ſay, that the leſs ſavage ſent them to their fathers.

AMBASSADOR, one who is ſent in a public character from one ſovereign to another. The word is derived from the low Latin, *ambaſciator*.

Ambaſſadors are either ordinary or extraordinary.

AMBASSADOR *Ordinary*, is one reſiding at another court for keeping up a good intelligence between the two powers, taking care of the intereſt of his maſter, and negociating ſuch affairs as may occaſionally happen. Till within theſe two centuries, all ambaſſadors were extraordinary, and retired as ſoon as they had finiſhed the affair they were ſent to negociate.

AMBASSADOR *Extraordinary*, is a perſon ſent to the court of a foreign power, on ſome particular emergent and preſſing affair, as to conclude a peace, or a marriage, make a compliment, &c. There is no eſſential difference between ambaſſadors ordinary and extraordinary; the motive of their ambaſſies alone diſtinguiſhes them: they are equally entitled to the privileges given to ambaſſadors by the law of nations. The name of ambaſſador, ſays Cicero, is ſacred and inviolable. And this has always been the opinion of all nations; for we find that David thought the affront offered to his ambaſſadors, a ſufficient reaſon for making war againſt the Ammonites; and Alexander put the inhabitants of Tyre to the ſword for inſulting his ambaſſadors.

AMBERVALIA, a ceremony among the antient Romans; when, in order to procure from the gods an happy harveſt, they conducted the victims thrice round the corn fields, in proceſſion, before they were ſacrificed.

AMBE, among ſurgeons, an inſtrument for reducing a diſlocated ſhoulder. This inſtrument has received various improvements at different times, and by different perſons. Mr. Freke, late ſurgeon to St. Bartholomew's hoſpital, both improved the machine, and rendered it portable; we ſhall therefore give a deſcription of the ambe, according to his conſtruction. This machine, (repreſented on plate V. *fig.* 1.) which conſiſts of two boxes, A, A, joined at the ends by two hinges, contains, when folded together, every thing that can poſſibly be wanted in reducing a diſlocated ſhoulder; and it may ſo eaſily be made uſe of, without the aſſiſtance of any other than the ſurgeon employed, that (ſays the ingenious author) I may venture to affirm, a patient may be ſet down, the inſtrument applied, and the ſhoulder reduced, in one minute, ordinarily ſpeaking. The length of this inſtrument, when ſhut up, is one foot eight inches, its breadth nine inches, and its thickneſs three inches and a quarter. When it is opened, it is kept ſo by two hooks fixed on the backſide of it; and when one end of it ſtands on the ground, the other ſtands high enough to become a fulcrum, or ſupport of the lever B, B, which is fixed on a roller *b*, by a large wooden ſcrew, which turning ſideways, as well as with the roller, it obtains a circumrotatory motion; ſo that it will ſerve to reduce a luxation, either backward, forward, or downward. The roller, on which the lever is fixed, is juſt the diameter of the depth of one of the boxes, into which are driven two iron pins, the ends of which are received by the two ſides of the box, which are an inch thick. The lever is two feet four inches long, and is cut off and joined again by two hinges C, to fold up ſo as to be contained in the boxes. On the backſide of it is a hook to keep it ſtraight; the other end of it is to hang over the roller about an inch and a half, which is to be excavated and covered with buff leather, for the more eaſy reception of the head of the os humeri. Two iron cheeks D, are ſcrewed on each ſide of the lever, to receive through them an iron roller, which has two holes through it to receive two cords coming from a brace F, fixed on the lower head of the os humeri; for on no other part of the arm above the cubit can a bandage for this purpoſe be uſeful; for, if it be applied on the muſcular part of the arm, it never fails ſlipping down to the joint before you can extend the limb. The iron roller has a ſquare end, on which is fixed a wheel G, within the cheek notched round, which works as a ratchet, on a ſpring catch underneath the lever, by which it is ſtopped, as you wind it with a winch; and may at pleaſure be let looſe, as there ſhall be occaſion for it, by diſcharging the catch. We come now to deſcribe the brace F, which, compared with common bandages, is of more conſequence than can eaſily be imagined by unexperienced perſons. It conſiſts of a large piece of buff leather, big enough to embrace the arm, ſewed on two pieces of ſtrong, iron, curved plates, rivetted together, one of them having an eye at each end to faſten two cords in; the other is bent at the ends into two hooks, which are to receive the cords, after they have croſſed over the arm above. In order to keep the patient ſteady in his chair from coming forward, or letting the ſcapula riſe up on depreſſing the lever, after the limb is extended by the winch, there muſt be fixed over the ſhoulder a girth with twoo hooks at the ends of it, long enough to reach to the ground on the other ſide, where it muſt be hooked into a ring I, ſcrewed into the floor for that purpoſe. *Philoſophical Tranſactions.*

AMBE, among anatomiſts, implies the ſuperficial jutting out of a bone.

AMBER, *ſuccinum*, or *electrum*, in natural hiſtory, a pellucid and very hard inflammable ſubſtance, of an uniform ſtructure, a bituminous taſte, a fragrant ſmell, when rubbed, and highly endowed with that remarkable property called electricity. Amber is a ſolid mineral bitumen; this bitumen is met with plentifully in regular mines in ſome parts of Pruſſia; the upper ſurface is compoſed of ſand, under which is a ſtratum of loam, and under this a bed of wood, partly entire, but chiefly mouldered or changed into a bituminous ſubſtance; under the wood is a ſtratum of vitriolic or rather a luminous mineral, and under this another bed of ſand, in which the amber is found. Strong ſulphureous exhalations are often perceived in the pits. The digging of amber is a very dangerous work; the ground not being ſtony or rocky, as in metallic mines, but ſandy or loamy, and hence very ſubject to fall in when hollow underneath. His Pruſſian majeſty receives a large annual revenue from this commodity: he has a peculiar council called the Amber-chamber; and no one but thoſe appointed for that purpoſe is permitted to dig or fiſh for amber in his dominions. Small quantities of amber are met with alſo in Bohemia, Sileſia, Saxony, Hungary, France, &c. The pieces of amber now and then found in theſe places were not perhaps originally produced there, but carried thither by the flood. Various kinds of ſubſtances are often encloſed in maſſes of amber, as drops of water, which paſs from ſide to ſide upon moving the maſs, ſmall bits of wood, moſs, leaves of plants, &c. a variety of inſects, particularly gnats, flies, ſpiders, ants, moths, butterflies, graſshoppers, bees, worms, cantharides, caterpillars, crickets, maggots, lice and fleas. There are reports alſo of frogs, vipers, fiſhes, and other large animals being found in maſſes of amber, and ſuch are figured in *Mercatus's Metallotheca*; but moſt of theſe are artificial preparations; even the fiſh in amber, in his Pruſſian majeſty's repoſitory, is manifeſtly factitious. The generality are however natural. Hence it is evident, that this bitumen has once been in a fluid ſtate, though we cannot conclude that it ever was a liquid or oily matter, and acquired its conſiſtency and ſolidity by degrees. Appearances are rather contrary to this ſuppoſition. The inſects found in amber have nothing of thoſe ſtrained or diſtorted poſtures which animals are naturally thrown into upon endeavouring to diſengage themſelves when entangled in a viſcous liquid. We often ſee pieces of amber in which there are perfect flies, with the wings and feet beautifully expanded as if they were ſtill flying. It is therefore moſt probable that the amber was generated inſtantaneouſly from the concourſe of mineral oil or petroleum, with vitriolic acid, in the form of vapours, which at once concreted together, and embalmed the inſects that happened to lye in their way, with a more durable and precious covering than has ever fallen to the lot of the moſt magnificent monarchs. There are different ſorts of amber in regard to external appearance; opake and tranſparent; white or whitiſh, yellowiſh or yellow, greeniſh, browniſh, bluiſh, reddiſh, or browniſh red; what is called black amber is no true amber, but bitumen of the pit-coal, aſphaltum, or jet kind. Some divide amber into native and factitious. There are indeed artificial maſſes reſembling amber in appearance; but no true amber has hitherto been produced by art. In Holland, a vegetable reſin, whoſe proper name is gummi de loock, is ſold under the name of American amber: this, when in conſiderable maſſes, and by itſelf, is eaſily diſtinguiſhed from the genuine amber, by its having leſs electricity, wanting the peculiar ſtrong ſmell which amber emits in burning, by its greater ſolubrity in ſpirit of wine, and not yielding the ſame principles as amber in diſtillation; ſmall pieces of the reſin, mixed among true amber, are diſcovered with more difficulty; and this abuſe is not unfrequently practiſed. With regard to the tranſparent ambers, it may be proper to take notice, 1. That inſects or other foreign bodies are obſerved chiefly in theſe; poſſibly they may often be lodged alſo in opake amber, though the opacity of the maſs prevents our ſeeing them. 2. That opake amber is capable of being made tranſparent by art; and hence that all our tranſparent ambers were not naturally ſuch. 3. That the fine gold yellow tranſparent ſort is entirely natural; the common methods of improving the tranſparency, weakening the colour. There are means of communicating to amber a variety of colours: one Somnelſon, an excellent artiſt at Breſlau, not only made opaque amber tranſparent, but tinged it red, blue, violet, of a purpliſh, green and white, and cut it into brilliants, necklaces, earpendants, bracelets, &c. in imitation of precious ſtones; as alſo into ſpectacles, microſcopes, priſms, burning lens's, &c. of which an account may be ſeen in the Breſlau collections. 4. That amber clarified by art is always harder, and leſs electric than in its natural untranſparent ſtate. The workmen have two methods of clarifying amber; one by ſurrounding the amber with ſand in an iron pot, and cementing it with a gradual fire for forty hours; ſome ſmall pieces placed near the ſides of the veſſel being occaſionally taken out for judging of the effect of the operation. The ſecond method, which is that moſt commonly practiſed, is by digeſting and boiling the amber about twenty hours in rapeſeed oil, by which it is rendered both clear and hard; treated in the ſame manner with linſeed oil, it does not become clear. Of the common menſtrua, there is not one which totally diſſolves this concrete; moſt liquors, however, extract ſome portion of it. A tincture made in vinous ſpirits is kept in the ſhops, highly rectified ſpirits of wine extracting of itſelf a ſufficiently ſtrong tincture.

Oil and Salt of AMBER. Amber melts and burns in the fire, and emits a ſtrong peculiar ſmell. Diſtilled in a ſtrong heat, it yields a phlegm, an oil, and a particular ſpecies of volatile ſaline matter. Thoſe whoſe ſole buſineſs it is to diſtil amber in Pruſſia, and whom long experience has taught the moſt advantageous methods of doing it, uſe no addition. The Engliſh chemiſts likewiſe diſtil their amber without addition, and ſell their reſiduum to the japanners, who prepare from it the fineſt black varniſh. See VARNISH.

The moſt valuable product in this operation is the ſalt, which, when obtained by the common proceſſes, will turn out browner, and browner, and is therefore to be reſerved for inferior purpoſes, or further purified by repeating the ſolution, filtration, and cryſtallization. With regard to its virtues, it is accounted aperient, diuretic, and antihyſteric; its great price has prevented its coming much into uſe; and probably its real virtues, though doubtleſs conſiderable, fall greatly ſhort of the opinion that has been generally entertained of them. The oil of amber is rectified by diſtilling it over, either by itſelf, or with different additions, as common water, burnt bones, lime, elixated aſhes, chalk, tobacco pipe clay, potaſh, &c. This oil has a ſtrong bituminous ſmell, and a hot pungent taſte; approaching more to the nature of the mineral petrolea than of the vegetable or animal diſtilled oils. It is ſometimes given internally, in doſes of ten or twelve drops, as an antihyſteric and emmenagogue; and ſometimes employed externally in an antihyſteric, paralytic, and rheumatic liniments, or unguents.

AMBERGRIS, *Ambragriſea*, in natural hiſtory, a marine bitumen, about the conſiſtence of wax, of a laminated ſtructure, as if the maſs was formed by a ſucceſſive appoſition of matter. It is ſometimes found in the waters of the ſea, ſometimes thrown out upon the ſhores, and ſometimes met with in the bodies of whales and other fiſhes, frequently intermixed with little bones, claws of birds, and other like matters. The greateſt quantities of ambergris are met with in the Eaſt Indies, about the iſland Madagaſcar, the Molucca iſlands, Mauritius and Neykotarres, the weſtern Sumatra iſlands, about the iſland Borneo and Cape Comorin, near Malabar, and on the Ethiopian coaſt, which, from Solafa to Brana, is ſaid to be very rich in ambergris. Pieces are ſometimes met with of an extraordinary ſize.

Ambergris is of various colours, but the aſh-grey coloured ambergris, with whitiſh, blackiſh, and yellowiſh ſtreaks or ſpecks, is accounted the beſt, eſpecially when intermixed with beaks of birds, bits of cuttle-bone, or other like matters; not that theſe are eſſential to ambergris, but they are marks of its being genuine. The beſt ambergris is light, like wax to the touch, crumbly, yet ſomewhat tenacious, ſo as to ſtick to the mortar or peſtle; it has an agreeable ſmell, but no remarkable taſte: it eaſily melts in the fire, takes flame from a candle, and burns away without intermiſſion. Ambergris is counterfeited or adulterated with wax, reſin, ſtorax, benzoine, amber, labdanum, muſk, civet, aloes wood, old decayed aſh-wood, rice-meal, tree-moſs, and other like ſubſtances. Theſe abuſes are eaſily detected. The counterfeit ſorts are commonly uniform throughout, both in colour and texture, like a paſte or maſs of pills, which the genuine ambergris never is. The analyſis of ambergris confirms the opinion that this concrete, whoſe origin was formerly ſo much diſputed, is truly a bitumen of the amber kind. Ambergris is uſed principally as a perfume, in balſams, ſnuffs, dentifrices, hair-powders, waſh-balls, &c. It was formerly held in ſome eſteem as a medicine, and ſaid to poſſeſs nervine, analeptic, aphrodiſiac, cephalic, and other virtues; but is at preſent little regarded. A tincture of it is ſometimes prepared with ſpirit of roſes. A few drops of which may be very advantageouſly added to any of the odoriferous waters, as hungary, lavendar, &c. Common water diſtilled from ambergris proves conſiderably impregnated with its fragrance.

AMBIDEXTER, one who uſes both hands alike, and with the ſame dexterity.

AMBIDEXTER, among lawyers, a juror who receives money from both parties for giving his verdict.

AMBIGENAL *Hyperbola*, a name given by Sir Iſaac Newton, in his *Enumeratio Linearum Tertii Ordinis*, to one of the triple hyperbolas of the ſecond order, having one of its infinite legs falling within an angle formed by the aſymptotes, and the other without that angle. As let A C, C D, (plate VII. *fig.* 2.) be two aſymptotes, and E E G F one of theſe hyperbolas; then if the infinite leg G E falls within the angle A C D, and the infinite leg G F without that angle, the ſaid hyperbola is called *ambigenal*.

AMBIGUITY, in grammar and rhetoric, a defect in language, whereby words are rendered ambiguous, or capable of a double meaning.

AMBLE, or AMBLING, in horſemanſhip, a peculiar kind of pace, wherein a horſe's two legs of the ſame ſide move at the ſame time. The ambling horſe changes ſides at each remove, two legs of a ſide being in the air, and two on the ground at the ſame time. An amble is uſually the firſt natural pace of young colts, which they quit as ſoon as they have ſtrength enough to trot: there is no ſuch thing as an amble in the manage, the riding-maſters allowing of no other paces beſides walk, trot and gallop; their reaſon is, that a horſe may be put from a trot to a gallop without ſuch ſtop, which loſes time, and interrupts the juſtneſs and cadence of the manage. The beſt way to bring a young horſe to amble is to try with the hand by a gentle and deliberate racking, and thruſting the horſe forwards, by helping him in the weeks of his mouth with your ſnaffle, which muſt be ſmooth, big, and full; and correcting firſt on one ſide, and then on the other, with the calves of your legs, and ſometimes with a ſpur. If you can make him of himſelf to ſtrike into an amble, though ſhuffling and diſorderly, there will be much labour ſaved; for that aptneſs to amble will make him with more eaſe and leſs danger endure the tramel, and find the motion without ſtumbling or amazement: but if you perceive he will by no means either apprehend the motions or intentions, then ſtruggle no longer with him, but apply the tramel immediately. *Newcaſtle's Horſemanſhip.*

AMBROSIA, among the ancient pagans, ſignified the ſolid food of the gods, in contradiſtinction to their drink, which was called nectar. They ſuppoſed that whoſoever eat of it was rendered immortal.

AMBROSIA, in botany, the name of a diſtinct genus of plants, with floſculous flowers, divided into five ſegments; but the fruit, which in ſome meaſure reſembles a club, grows on other parts of the plant.

AMBUSCADE, a military term, implies a body of men poſted in ſome ſecret or concealed place, till they find an opportunity of falling upon the enemy by ſurprize.

AMEN, a ſolemn concluſion to the prayers of the church; and ſignifies ſo be it.

The word is Hebrew, and formed from the verb, *aman*, which in the paſſive voice ſignifies to be true, faithful, &c. There is alſo formed from this noun a kind of affirmative adverb, ſignifying truly, verily; and in this ſenſe it is often uſed in the Goſpels.

AMENDMENT, in law, the correction of an error committed in a proceſs, which may be amended after judgment, unleſs the error lies in giving judgment; for in that caſe it is not amendable, but the party muſt bring a writ of error.

AMENDMENT, in a literary ſenſe, the correction of ſome impropriety in the former edition of a book.

AMENTACEOUS, in botany, an epithet applied to ſuch flowers as have an aggregate of ſummits hanging down in the form of a rope or cat's-tail.

AMERCEMENT, or **AMERCIAMENT**, in law, a pecuniary puniſhment impoſed on offenders at the mercy of the court. It differs from a fine in being impoſed arbitrarily in proportion to the fault; whereas a fine is a certain puniſhment ſettled expreſsly by ſome ſtatute.

* **AMERICA**, is bounded on all ſides by the ocean, and is called one of the four parts or quarter of the world; but it is much the largeſt. It was firſt diſcovered by Chriſtopher Columbus, a Genoeſe, in 1491, and was called America from Americus Veſpucius, a Florentine, who made ſome farther diſcoveries of the ſouth part of that continent. It is about ſeven thouſand miles long, and in ſome places three thouſand ſix hundred and eighty broad, in others not above ſixty. It has been long diſputed which way this part of the world came to be peopled, concerning which there are various conjectures, moſt of which are very wide of the truth. The difficulties ariſe from hence: All the people, except thoſe of the north, are of a kind of copper colour; they have no hair on any part of their bodies, except the head, which is long and black. It was formerly ſaid that they plucked off their beards by the roots as faſt as it grew, but this is denied by thoſe who have lived among them. They ſpeak a vaſt number of languages, but none of them have any affinity with thoſe which we are acquainted with. Their animals are generally different from thoſe in other parts, though called by the ſame names: for inſtance, the American oſtrich has three toes, one of which grows backward; whereas the Aſian and African oſtrich has only two toes before, and none backwards, beſides other material differences. At its diſcovery it had no horſes, cows, hogs, goats, ſheep, &c. ſo common in all other parts. The air of America muſt be various, becauſe it lies under all the different zones, and has conſequently all the variations of climate that are to be found in all the other parts of the earth. The ſame may be ſaid with reſpect to the ſoil; but if we except the northern and ſouthern countries, which from their ſituation are cold and barren, the reſt produces moſt of the metals, gems, trees, plants, and fruits, that are to be found in the other parts of the world, and ſome of them in greater abundance, and higher perfection. Thus the gold and ſilver of America have been brought in ſuch quantities to Europe, as to lower the value of thoſe precious metals; and the ſame may be ſaid of its diamonds, pearls, emeralds, amathyſts, and other gems. To theſe may be added a variety of other commodities, which though eſteemed leſs valuable, are of much greater uſe, ſuch as cochineal, braſil, logwood, indigo, anatto, fuſtic, chocolate nut, ſugar, rice, pimento, ginger, tobacco, cotton, the balſams of Tolu, Peru, and China, ſarſaparilla, ſaſſafras, Jeſuits bark, mechacan, caſſia, tamarinds, lignum vitæ, ambergris, hides, furs, and a great variety of beautiful and medicinal woods, roots, and plants; to which, before the diſcovery of America, we were either entire ſtrangers, or forced to buy at an extravagant rate from Aſia and Africa. In America, a variety of the moſt excellent fruits grow wild in the greateſt perfection; and the ſoil is ſo ſurpriſingly fertile, that many exotic plants flouriſh there in as great perfection as in their native ſoil. Yet, notwithſtanding this amazing plenty and variety, at the firſt diſcovery of this vaſt continent, our kind of ſheep, goats, aſſes, and horſes, were not to be found there; but theſe have ſince been brought thither, and in thoſe fertile paſtures have encreaſed ſo faſt, that the inhabitants are well ſtocked with them, but, in the room of theſe domeſtic animals, they had many others to which we were utter ſtrangers. America has two principal gulphs, that of St. Lawrence to the north-eaſt and that of Mexico, in which is the mouth of the river Miſſiſipi. There are four famous rivers; the Amazons, the Plata, which riſes in Peru, near a town of the ſame name; the river St. Lawrence, which traverſes Canada from the ſouth-weſt to the north-eaſt, paſſes by Quebec, and falls into the gulph of St. Lawrence; and the Miſſiſipi, which runs from the north to the ſouth, and falls into the gulph of Mexico. The moſt conſiderable chain of mountains in South America is the Andes, which is the higheſt and longeſt chain of mountains in the world. In North America, are the Aligany mountains, which ſome have called the Apalachian; they run on the back of the Britiſh ſettlements, from Carolina to New York.

America is divided into,

I. The dominions of Great-Britain, which contain the countries about Hudſon's Bay, Canada, Nova Scotia, New England, New York, the Jerſeys, Penſylvania, Maryland, Virginia, Carolina, Georgia, Eaſt and Weſt Florida, on the continent; with the iſlands of Newfoundland, Cape Breton, St. John's, Providence, Jamaica, St. Chriſtopher's, Antigua, Nevis, Dominica, Barmuda, Anguilla, Montſerrat, Tobago, St. Vincent, Barbadoes, Granada, and the Granadillos, &c.

II. The dominions of Spain contain Louiſiana, Old Mexico, New Mexico, and California, in North America; the extenſive countries of Terra Firma, Peru, and Paraguay, in South America; with the valuable iſlands of Cuba, half of St. Dominigo or Hiſpaniola, Porto Rico, Trinidad, and Margarita, in North America; Chiloe, the King's or Pearl iſlands, Juan Fernandes, and the Gallipagos iſlands in the Pacific Ocean.

III. The dominions of France conſiſt of only part of Guiana in South America, and the iſlands of Martinico, Guadaloupe, half of Hiſpaniola, Marigalante, Deſeada, St. Bartholomew's, and St. Martin's.

IV. The dominions of Portugal conſiſt of the rich and extenſive country of Braſil, in South America.

V. Thoſe of the Dutch conſiſt of Surinam, on the continent of South America; the iſlands of Curaſſao, Bonaire, and Aruba, near the coaſt of Terra Firma, with St. Euſtatia and Sala, two of the Caribbee iſlands.

VI. Thoſe of the Danes, which conſiſt of the iſlands of St. Thomas and St. Croix.

VII. The parts ſtill in the poſſeſſion of the native Indians are the countries to the north and the weſt of our colonies, thoſe north-weſt of Mexico, the greateſt part of Guiana, and all the moſt ſouthern part of the continent, as Patagonia, and the iſland Terra del Fuego.

AMETHYST, *Amethyſtus*, in natural hiſtory, a gem, or precious ſtone of a purple colour, reſembling a violet, and ſometimes fading to a pale roſe-colour. Sometimes it is found colourleſs, and may at any time be made ſo by expoſing it to the fire; in which pellucid, or colourleſs ſtate, it ſo nearly imitates the diamond, that even jewellers themſelves are often deceived, it wanting nothing but the hardneſs to render it equal to that gem. They are found in India, Arabia, Armenia, Ethiopia, Cyprus, Germany, Bohemia, and Miſnia; but as they are generally as ſoft a cryſtals, they are not in very great eſteem. The oriental are hardeſt; if they are without ſpots, they are of the greateſt value. They are found of various ſizes, and in various ſhapes, from the bigneſs of a ſmall pea, to an inch and a half in diameter. They are adulterated with maſtic, tinged of a violet colour, placed between two chryſtals.

AMETHYST, in heraldry, is a term uſed for a purple colour in the coat of a nobleman.

AMIABLE, or AMICABLE *Numbers*, in arithmetic, are ſuch as are equal to the ſum of each other's aliquot parts. Thus the numbers 284 and 220 are amicable numbers; for the aliquot parts 1, 2, 4, 5, 10, 11, 20, 22, 44, 55, 110, of 220, are together equal to the other number 284; and the aliqout parts 1, 2, 4, 71, 142, of 284, are together equal to 220.

AMIANTHUS, in natural hiſtory, vulgarly called earth-flax, is a fibrous, flexible, and mineral ſubſtance, compoſed of ſhort and abrupt filaments. It is a ſtony concrete, of the talky kind, though differing from talc in its external appearance. It is not near ſo bright, or ſo ſmooth or unctuous; and compoſed not of leaves, or plates, but of long filaments like flax: it has been ſpun into cloth, and formed into paper, incombuſtible and indeſtructible in the fire. There are ſome ſorts of amianthus whoſe filaments are rigid and brittle, others more flexible: the firſt are not at all to be ſpun or formed into cloth; and the latter with very great difficulty. This manufacture appears to have been known among the ancients, who, according to Pliny, wrapt the corpſe of the dead in amianthine clothes, to preſerve their aſhes ſeparate from thoſe of the funeral pile; an uſe to which they are ſtill ſaid to be applied among the princes of Tartary.

AMICITIA, in the feudal cuſtoms, were lands granted to be enjoyed only ſo long as the donor pleaſed.

AMIDSHIPS, amongſt ſeamen, the middle of the ſhip, either with regard to her length or breadth.

AMMI, biſhops weed, in botany, a diſtinct genus of umbelliferous plants, the flower of which is roſaceous, compoſed of heart-like petals; and its fruit a ſmall roundiſh and ſtriated capſule, containing two ſtriated ſeeds, convex on one ſide. The ſeeds of this plant have been long known in the ſhops as one of the leſſer ho ſeeds, and eſteemed aromatic, aperitiv carminative, and alexipharmic.

AMMODYTES, the ſand ſerpent, in natural hiſtory, the name of a ſerpent found in different parts of the world, particularly in the torrid zone, and ſo called from its burying itſelf in the ſand. This ſerpent reſembles the viper, except in its head and jaws, which are much larger. It is about two feet in length, and of a ſandy colour. On the external part of its upper jaw there is an eminence reſembling a wart, whence it has alſo been called the horned ſerpent. The ammodytes of Ceylon is a very large and dangerous ſerpent, with a mouth full of ſharp teeth. The eyes are large and ſparkling, and the forehead is covered with ſmall round ſcales, ſome of which are yellow, others red and ſpeckled with black. On each ſide of the eyes are black ſtripes reaching to the neck; but the body, above and below, is of a whitiſh aſh-colour; and on the back are angular ſpots variegated with white and brown. The ſcales that cover the upper part of the body, are placed like net-work, with large meſhes, and the tail is ſpotted with brown, ending in a bony point. The ammodytes of Surinam is a ſerpent which the negroes have in high eſteem, and they think themſelves very happy if they come into their huts; their colours are ſo many and beautiful, that they ſurpaſs deſcription.

AMMON, in mythology, the name of the Egyptian Jupiter, worſhipped under the figure of a ram. Bacchus, having ſubdued Aſia, and paſſing with his army through the deſarts of Africa, was deſtitute of water; but Jupiter, his father, aſſuming the ſhape of a ram, led him to a fountain, where he refreſhed himſelf and his army: in requital of which favour, Bacchus built there a temple to Jupiter, under the title of Ammon, from the Greek αμμος, which ſignifies ſand, alluding to the ſandy deſart where it was built. This is the poetical account: it is however more probable that the Egyptians worſhipped the ſun under this name; for *hammah*, in Hebrew, ſignifies the ſun; or perhaps they meant it by Ham, the ſon of Noah, whoſe poſterity ſettled in Libya.

Cornu AMMONIS, in natural hiſtory; ſee the article Cornu *Ammonis*.

AMMONIACUM, or *Gum* AMMONIACUM, in the materia medica, a concrete gummy reſinous juice brought from the Eaſt-Indies, and generally in large maſſes.

Both the plant which produces ammoniacum, and the place of its production, are unknown. The beſt ammoniacum is compoſed of white, whitiſh, or yellowiſh tears baked into maſſes: the internal parts particularly are whitiſh, by age it becomes more and more yellow and brown. It eaſily ſoftens and becomes tough betwixt the fingers. Chewed, it diſcovers a bitteriſh, glutinous, not diſagreeable, taſte. Its ſmell approaches to that of a mixture of opopanax and galbanum; ſome reſemble it to that of caſtor, others to that of coriander-ſeeds, and others to that of garlic.

It diſſolves almoſt equally in water and ſpirit; is accounted deobſtruent; promotes urine; and, in large doſes, opens the belly. It is given particularly in obſtructions of the breaſt, in cachectic, hydropic, and apoplectic caſes, from a ſcruple to half a dram. It operates more effectually in a liquid form, as that of an emulſion, than in the ſolid one of pills; but is moſt commodiouſly taken in the latter form. It is ſometimes diſſolved in vinegar: externally it reſolves hard ſwellings. It is purified by diſſolving it in vinegar, wine, or water, and ſtraining and inſpiſſating the ſolution.

AMMONITÆ, in natural hiſtory, the ſame with cornu ammonis. Se Cornu *Ammonis*.

AMMUNITION, in military affairs, a general name for powder, balls, &c.

AMMUNITION *Bread, Shoes, &c.* ſuch as are ſerved out to the ſoldiers of an army, garriſon, &c.

AMNESTY, in civil policy, an act, whereby two parties at variance mutually promiſe to pardon and bury in oblivion all that is paſt. In a more limited ſenſe it ſignifies a pardon granted by a prince to his ſubjects, by which the former promiſes to forget and annul all that is paſt.

AMOMUM *Verum*, true amomum, in the materia medica, a cluſter of round fruits, or ſeed veſſels, of an oriental plant. The ſeeds of amomum are a ſtrong and grateful aromatic, of a quick penetrating fragrant ſmell, ſomewhat like that of lavender, but more agreeable, and of a very warm pungent taſte, approaching to that of camphor. The huſks have the ſame kind of flavour in a lower degree. Theſe ſeeds have long been a ſtranger to this country.

AMOMUM *Vulgare*, baſtard ſtone parſley, in the materia medica. It grows wild under moiſt hedges, and by the ſides of ditches; flowers in June and July, and ripens its ſeeds in Auguſt. The ſeeds of the amomum vulgare have a light agreeable ſmell, and a mild warm aromatic taſte. They have been ſometimes given as carminatives and diuretics, like the other warm ſeeds, and uſually ſubſtituted in the ſhops for thoſe of the amomum verum, from which, however, they are very conſiderably different in quality, as well as in appearance: they are not near ſo hot or pungent, nor is their flavour of the ſame kind. Theſe ſeeds, infuſed in water, give out very little of their virtue: but in diſtillation with water they yield a ſmall portion of a yellowiſh eſſential oil, which taſtes and ſmells ſtrongly and agreeably of the ſeeds.

Rectified ſpirit readily extracts their virtue. The extract taſtes ſtrongly, and ſmells lightly of the amomum, and proves a moderately warm, bitteriſh, not ungrateful, aromatic.

* AMPHIARAUS, in Pagan mythology, a celebrated prophet, who poſſeſſed part of the kingdom of Argos. He was ſuppoſed to excel in divining by dreams, and is ſaid to be the firſt who divined by fire. Amphiaraus knowing, by the ſpirit of prophecy, that he ſhould loſe his life in the war againſt Thebes, hid himſelf, in order to avoid engaging in that expedition; but his wife Eriphyle, being prevailed upon by a preſent of a necklace, diſcovered the place in which he had concealed himſelf; ſo that he was obliged to accompany the other princes who marched againſt Thebes, which proved fatal to him; for the earth being ſplit aſunder by a thunder bolt, both he and his chariot were ſwallowed up in the opening. When he ſet out on this expedition, he was ſo provoked at his wife, that he enjoined his children to put her to death as ſoon as their age would allow them, which was accordingly performed by Alcmeon. Amphiaraus, after his death, was ranked among the Gods; temples were dedicated to him; and his oracle, as well as the ſports inſtituted to his honour, were very famous.

AMPHIBIOUS, in natural hiſtory, an epithet applied to ſuch animals as live part of their time on the land, and part in the water. Linnæus has made a claſs of amphibious animals; the firſt order of which contains the tortoiſe, the frog, the crocodile, the lizard, ſalamander, the cameleon, the ſcinc, &c. and the ſecond the ſerpents.

AMPHIBRACHYS, in the Greek and Latin poetry, a foot conſiſting of three ſyllables, one long and the other two ſhort, the former being in the middle, and the others forming the two extremities.

AMPHICTYONS, in antiquity, the deputies ſent from the different ſtates of Greece, to Thermopil, where they met regularly twice a year, in the temple of Ceres, built in a large plain near the river Aſophus. They decided all differences that happened between any of the cities of Greece, and their deciſions were held ſacred and inviolable. They had their name from Amphictyon III. king of Athens, who firſt eſtabliſhed an aſſembly of Amphictyons, in order to unite the Greeks more firmly together, and render them a terror to the barbarous nations in their neighbourhood.

* AMPHILOCLES, in Pagan mythology, the ſon of Amphiaraus and Eriphyle, was both a king and a prophet, for he reigned at Argos; but not being able to maintain himſelf in that kingdom, he built a city in the bay of Ambraccia; but his brother Mopſus and he quarrelling, they killed each other in a duel. Amphilocles had an altar erected to him at Athens, which did not contribute ſo much to the glory of his name, as an oracle he had at Mallus in Cilicia.

* AMPHION, in fabulous hiſtory, the ſon of Jupiter and Antiope, he played ſo well on the lyre, that the rocks were ſaid to follow him, and the ſtones moved by his harmony, ranged themſelves in order, and formed the walls of Thebes. He married Niobe, whoſe inſult to Diana occaſioned the loſs of their children; when the unhappy father, filled with deſpair, attempted to deſtroy the temple of Apollo, but was puniſhed by the loſs of his ſight and ſkill, and caſt into the infernal regions.

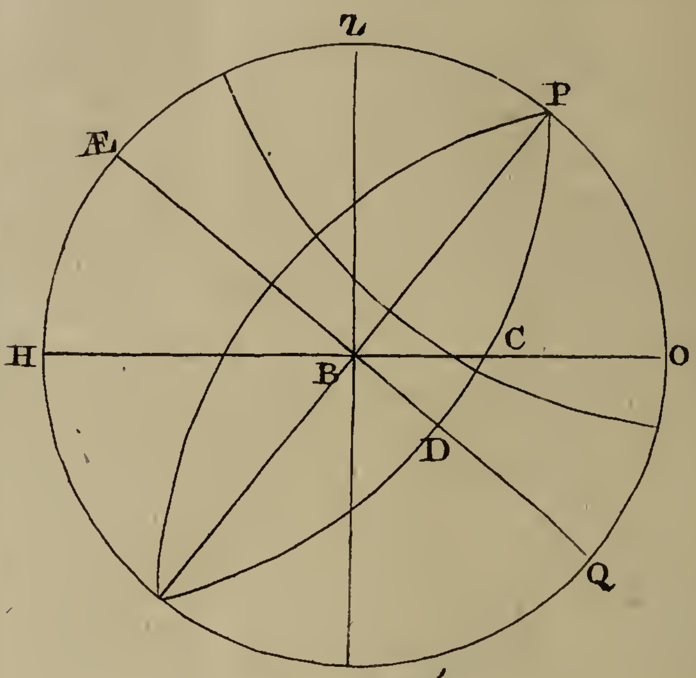
AMPHIPOLES, in antiquity, the principal magiſtrates of Syracuſe. They were eſtabliſhed by Timoleon in the 109th Olympiad, after the expulſion of the tyrant Dyonyſius. They governed Syracuſe for the ſpace of three hundred years; and Diodorus Siculus aſſures us, that they ſubſiſted in his time.

AMPHISBÆNA, in natural hiſtory, a kind of ſerpent, found in hot climates, and ſo called becauſe it moves with either end forward.

AMPHISCII, in geography, a name applied to thoſe people who inhabit the torrid zone; becauſe their ſhadows point one part of the year towards the north, and the other towards the ſouth.

AMPHITHEATRE, in antiquity, a ſpacious edifice of a circular or oval form, with riſing ſeats, on which the people ſat to behold the combats or gladiators, wild beaſts, and other ſports. Amphitheatres were originally built of wood; and Statilius Taurus, in the reign of Auguſtus, was the firſt who erected one of ſtone. The loweſt part was called *arena*, from its being generally ſtrewed with ſand, for the conve-

PLATE VII. Facing Amplitude.



Amplitude. Fig. 1.

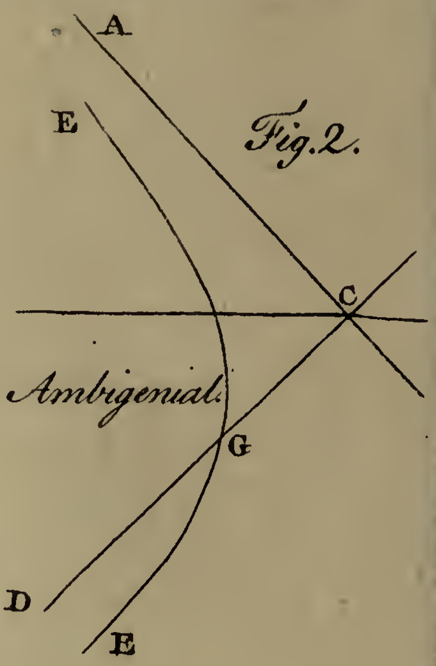


Fig. 2.

Ambigenial.

Astronomical Sector.

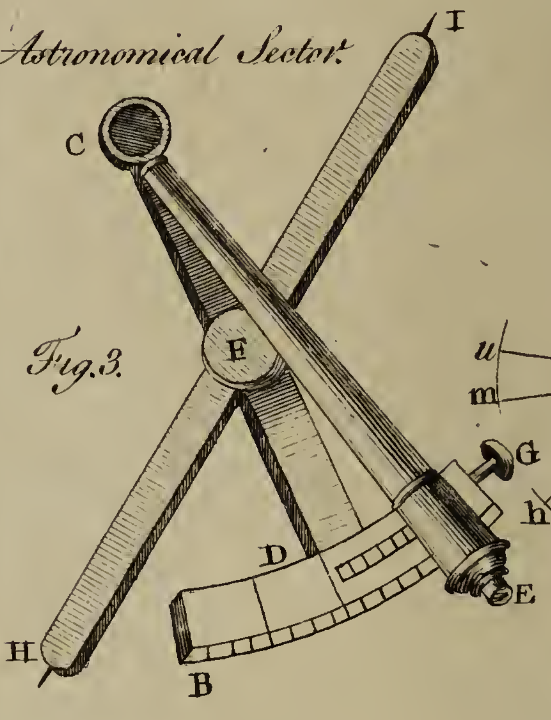


Fig. 3.

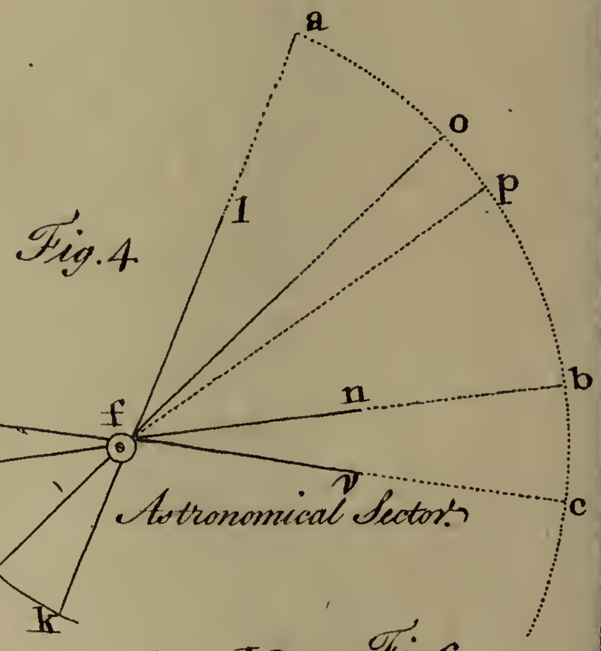
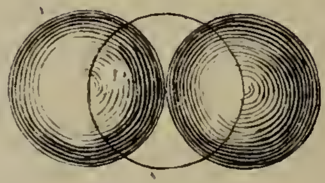


Fig. 4.

Astronomical Sector.

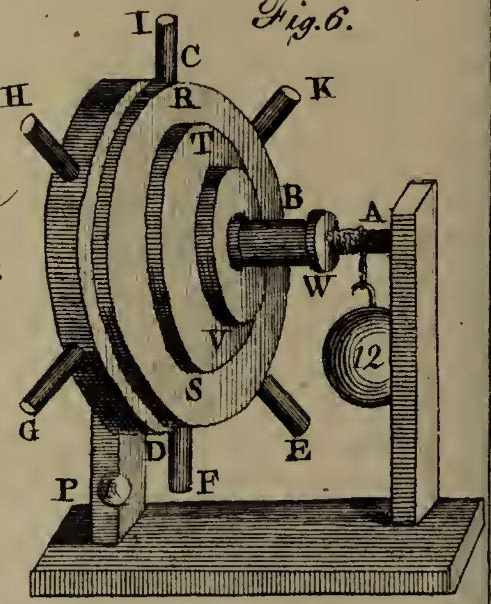
Fig. 5.



Attraction.

Fig. 6.

Axis in Peritrochio.



veniency of the combatants ; and round the arena were vaults, in which the wild beaſts, appointed for the ſhews, were contained. Above theſe cells was erected a large circular periſtyle, for accommodating the emperors, ſenators, and other perſons of diſtinction. Over the periſtyle were the rows of benches, which were entered by avenues terminated by gates called vomitoriæ.

AMPHITRITE, in mythology, a goddeſs of the ſea, the daughter of Ocean and Doris, and wife of Neptune. She at firſt refuſed the addreſſes of Neptune, and reſolved to preſerve her virginity ; but he ſent a dolphin in ſearch of her, who found her at the foot of Mount Atlas, and perſuaded her to marry the god of the ſea. Two of the Nereides were alſo called by this name.

AMPLIFICATION, in rhetoric ; ſee EXAGGERATION.

AMPLITUDE, in aſtronomy, an arch of the horizon, intercepted between the true eaſt or weſt point thereof, and the center of the ſun, or a ſtar, at its riſing or ſetting ; the former is called the eaſtern or ortive, and the latter the weſtern or occiduous amplitude. The eaſtern and weſtern amplitude are alſo called northern and ſouthern, as they fall in the northern and ſouthern quarters of the horizon. To find the amplitude trigonometrically, by having the latitude of the place and declination of the ſun given ; let H O (plate. VII. *fig.* 1.) repreſent the horizon, P the north and S the ſouth pole ; Æ Q the equator, Z the zenith, and N the nadir, and the primitive circle H P O S a meridian ; then will B be the eaſt or weſt point of the horizon ; and if C repreſent the center of the ſun, or of a ſtar, at its riſing, the arch B C will be the amplitude required. Suppoſe the latitude 50° 30' N. and the ſun's declination 21° 00' ; then in the right angled ſpherical triangle B D C, right angled at D, are given the perpendicular D C = the ſun's declination = 21°, and the angle D B C = the arch O Q, = the comp. lat. = 39° 30' to find the hypothenuſe B C ; which will be found by the following proportion.

As the ſine of the angle D B C = 39°, 30'		9,803510
To radius	90°, 00'	10,000000
So is the ſin. of D C, the ſun's dec. = 21°, 00'		9,554329
To the ſin. of B C, the amp. req. = 34°, 18'		9,750819

Magnetical AMPLITUDE is an arch of the horizon contained between the center of the ſun at his riſing or ſetting, and the eaſt or weſt point of the compaſs. It is found by an amplitude or azimuth compaſs, by obſerving the ſun at his riſing or ſetting, and is always equal to the difference between the true amplitude, and the variation of the compaſs.

AMPLITUDE of the range of a projectile, denotes the horizontal line ſubtending the path in which it moves. See PROJECTILE.

AMPLITUDE *Compaſs*, in navigation, an inſtrument more exactly calculated to obſerve the ſun's magnetical amplitude than the common ſea-compaſs. See *Amplitude* COMPASS.

AMPUTATION, in ſurgery, the operation of cutting off a limb or other part of the body.

Manner of AMPUTATING *a Limb*, from *Shape's Treatiſe on Surgery.*——Lay your patient on a table, three feet four inches high, which is much better than a low ſeat, both for ſecuring him ſteady, and giving yourſelf the advantage of operating without ſtooping, which is not only painful but inconvenient in the other ſituation. While one of your aſſiſtants holds the leg, you muſt roll a ſlip of fine rag, half an inch broad, three or four times round it, about four or five inches below the inferior extremity of the patella ; this being pinned on is to ſerve as a guide to the knife, which without it, perhaps, would not be directed ſo dexterouſly ; the manner of rolling has always been perpendicular to the length of the leg ; but having obſerved, that though the amputation at firſt be even, yet afterwards the gaſtrocnemius muſcle, contracting, draws back the inferior part of the ſtump more ſtrongly than the other muſcles can do the reſt of it ; I have lately, in order to preſerve the regularity of the cicatrix, allowed for this exceſs of contraction, and made the circular inciſion in ſuch a manner, that the part of the wound which is on the calf of the leg, is farther from the ham than that on the ſhin is from the middle of the patella.

In the mean time, one of your aſſiſtants muſt carry a ſtrong ligature round the thigh, about three or four inches above the patella, which, paſſing through a couple of ſlits in a ſquare piece of leather, he muſt twiſt with a tourniquet, till the artery is ſufficiently compreſſed, to prevent any great effuſion of blood ; and, to do it more effectually, he may lay a bolſter of tow or linen under the ligature, upon that part where the artery creeps.

The courſe of the blood being ſtopped, you muſt begin your inciſion juſt below the linen roller, on the under part of the limb, bringing your knife towards you; which, at one ſweep, may cut more than the ſemi-circle: then, beginning your ſecond wound on the upper part, it muſt be continued from the one extremity to the other of the firſt wound, making them but one line. The inciſions muſt be made quite through the membrana adipoſa, as far as the muſcles; then taking off the linen roller, and an aſſiſtant drawing back the ſkin as far as it will go, you make your wound from the edges of it, when drawn back, through the fleſh to the bone, in the ſame manner as you did through the ſkin. Before you ſaw the bones, you muſt cut the ligament between them with the point of your knife: and the aſſiſtant, who holds the leg while it is ſawing, muſt obſerve not to lift upwards, which would clog the inſtrument.

In amputating below the knee, it is of advantage to ſtand on the inſide of the leg, becauſe the tibia and ficula lie in a poſition to be ſawed at the ſame time, if the inſtrument be applied externally: whereas, if we lay it on the inſide of the leg, the tibia will be divided firſt, and the fibula afterwards; which not only lengthens the operation, but is alſo apt to ſplinter the fibula when it is almoſt ſawed through, unleſs the aſſiſtant be very careful in ſupporting it.

When the leg is taken off, the next regard is to be had to the ſtopping of the blood, which muſt be effectually done before the patient is put to bed, or there will be great danger of bleeding again, when the fever is excited, and the veſſels of the ſtump dilated, both which happen a very little while after the operation. There is no method for this purpoſe ſo ſecure as tying the extremities of the veſſels with a ligature, which, with a crooked needle paſſed twice through the fleſh almoſt round them, will, when the knot is made, neceſſarily incloſe them in the ſtricture; and to diſcover the orifice of a veſſel, your aſſiſtant muſt every time looſen the tourniquet; this is a much better way than uſing the artery forceps, where the veſſels are apt to ſlip away out of the ligature; and as to ſtyptic applications, their want of ſafety is ſo well known now, that the uſe of them, in hæmorhages from large veſſels, is almoſt univerſally rejected.

It ſometimes happens in a large ſtump, that ten or more veſſels require tying: which done, you muſt apply looſe dry lint to the wound, or, in caſe the ſmall veſſels bleed plentifully, you muſt throw a handful of flour among the lint, which will contribute to the more effectual ſtopping up their orifices. Before you lay on the pledget, you muſt bind the ſtump, and begin to roll from the lower part of the thigh down to the extremity of the ſtump. The uſe of this roller is to keep the ſkin forwards, which, notwithſtanding the ſteps already taken to prevent its falling back, would in ſome meaſure do ſo, unleſs ſuſtained in this manner. The dreſſings may be ſecured by the croſs cloth and gentle bandage; and the method of treating the wound muſt be the ſame as that for other recent and inciſed wounds. See WOUND.

Before the invention of making the double inciſion I have juſt now deſcribed, the cure of a ſtump was always a work of time; for by cutting down to the bone at once, and ſawing it directly, the conſequence was, that the ſkin and fleſh withdrew themſelves, and left it protruding out of the wound two or three inches in ſome caſes; ſo that it rarely happened that an exfoliation did not follow; which, beſides being tedious, alſo frequently reduced the wound to an habitual ulcer, and at beſt left a pointed ſtump, with a cicatrix ready to fly open upon the leaſt accident; all which incoveniences are avoided by this new method, and I know not of any objection to it, unleſs that the pain of making the wound is ſuppoſed to be twice as much as in the other, becauſe of the double inciſion; but when we conſider that we only cut the ſkin once, and the fleſh once, though not in the ſame moment, I fancy, upon reflection, the difference of pain will be thought inconſiderable.

In amputating the thigh, the firſt inciſion is to be made a little more than two inches above the middle of the patella; after the operation, a roller ſhould be carried round the body, and down the thigh, to ſupport the ſkin and fleſh. This is alſo the moſt proper bandage, as abſceſſes will ſometimes form in the upper part of the thigh, which cannot diſcharge themſelves ſo conveniently with any other, it being almoſt impracticable to roll about the abſceſs, unleſs you begin from the body.

The amputation of the arm and cubit differs ſo little from the foregoing operations, that it will be but a repetition to deſcribe it. However, it muſt be laid down as a rule, to preſerve as much of the limb as poſſible, and, in all amputations of the upper limbs, to place your patient in a chair.

There are, in armies, a great many inſtances of gun-ſhot wounds of the arm, near the ſcapula, which require amputation

tion at the ſhoulder ; but the apprehenſion of loſing the patients on the ſpot by the hæmorrhage, has deterred ſurgeons from undertaking it. I have heard of its having been done once ; but though it had never been performed, we might learn it is practicable from the caſe of a poor miller, whoſe arm and ſcapula were both torn from his body by a rope, which was accidentally twiſted round his wriſt, and ſuddenly drawn up by the mill. The poor man recovered in a few weeks. It is remarkable in this accident, that after fainting, the hæmorrhage ſtopped of itſelf, and never bled afreſh, though nothing but lint and turpentine were laid on the great veſſels. In caſe, therefore, of a wound or fracture near the joint, or incurable fiſtulas in the joint, not attended with much caries, I think the operation may be performed ſafely in this manner : The patient's arm being held horizontal, make an inciſion through the membrana adipoſa, from the upper part of the ſhoulder, acroſs the pectoral muſcle down to the arm-pit ; then, turning the knife with its edge upwards, divide that muſcle, and part of the deltoid ; all which may be done without danger of wounding the great veſſels, which will become expoſed by theſe openings ; if they be not, cut ſtill more of the deltoid muſcle, and carry the arm backward : then with a ſtrong ligature having tied the artery and vein, purſue the circular inciſion through the joint, and carefully divide the veſſels at a conſiderable diſtance below the ligature ; the other ſmall veſſels are to be ſtopped as in other caſes.

In performing this operation, regard ſhould be had to the ſaving as much ſkin as poſſible, and to the ſituation of the proceſſus acromion, which projecting conſiderably beyond the joint, an unwary operator would be apt to cut upon it.

The amputation of the fingers and toes is better performed in their articulation, than by any of the other methods : for this purpoſe a ſtraight knife muſt be uſed, and the inciſion of the ſkin be made not exactly upon the joint, but a little towards the extremity of the fingers, that more of it may be preſerved for the eaſier healing afterwards ; it will alſo facilitate the ſeparation in the joint, when you cut the finger from the metacarpal bone, to make two ſmall longitudinal inciſions on each ſide of it firſt. In theſe amputations there is generally a veſſel or two that require tying, and which often prove troubleſome when the ligature is omitted.

It may happen that the bones of the toes, and part only of the metatarſal bones, are carious, in which caſe the leg need not be cut off, but only ſo much of the foot as is diſordered ; a ſmall ſpring-ſaw is better to divide with here than a large one. When this operation is performed, the heel and remainder of the foot will be of great ſervice, and the wound heal up ſafely, as I have once found by experience. *Sharp's Surgery.*

AMSDORFIANS, in eccleſiaſtical hiſtory, a ſect of proteſtants who appeared in the ſixteenth century, and acquired the name from one Amſdorf their leader. They maintained that good works were ſo far from being profitable, that they were even pernicious, and obſtacles in the road to ſalvation ; a doctrine too much like that of ſome of our modern enthuſiaſts.

* AMSTERDAM, the capital city of the province of Holland, and the United Netherlands, it is ſeated on the river Amſtel and an arm of the ſea called the Wye. It is a very large trading city, and may be called the magazine of the univerſe. However, the air is but indifferent, which proceeds from the marſhes that ſurround it, and render it almoſt inacceſſible; but this inconvenience is abundantly recompenſed by the utility of its commerce, which its port ſerves greatly to promote ; for it will contain above a thouſand large ſhips. Amſterdam, being ſeated in a marſhy ſoil, is built on piles of wood, for which reaſon no coaches are alowed, except to great men and phyſicians, who pay a tax for that privilege ; and all kinds of goods are drawn on ſledges ; and it ſtands ſo low, that they would be expoſed to inundations, if they did not ſecure themſelves by dikes and ſluices. The fineſt ſtreets are, the Keyſar's Graft, or Emperor's Canal ; the Heer Graft, or Lords Canal ; the Cingel ; and the ſtreet of Haerlem. The principal canal is remarkable for its houſes, which are magnificent ſtructures, of an equal height, There are three prodigious ſluices, and a great number of ſtone bridges over the canals, which croſs the city in many parts, and render the ſtreets clean and pleaſant. The canals are deep, their ſides are lined with hewn ſtone, and have generally rows of trees planted on each ſide. The public buildings are very magnificent. The ſtadt-houſe was began to be built in 1648 ; it is founded upon fourteen thouſand wooden piles, and its front is two hundred and eighty two feet long, its ſides two hundred and fifty-five feet, and its height to the roof one hundred and ſixteen. There is a marble pediment in the front, whereon a woman is carved in relievo, holding the

arms of the city; ſhe is ſeated in a chair, ſupported by two lion, with an olive-branch in her right hand; and on each ſide are four Naiads, who preſent her with a crown of palm and laurel; and two other marine goddeſſes preſent her with all manner of fruit; beſides, there is Neptune with his trident, accompanied with Tritons, a ſea-unicorn, and a ſea-horſe. On the top ſtands three ſtatues in bronze, repreſenting Juſtice, Strength, and Plenty. On the top of the ſtructure is a round tower, fifty feet above the roof, adorned with ſtatues, and an harmonious chime of bells, the largeſt of which weighs about ſeven thouſand pounds, and the next ſix thouſand; they are made to play different tunes every month. It has no handſome gate, but only ſeven doors to anſwer to the number of the United Provinces. On the floor of the great hall are repreſented two globes, the celeſtial and terreſtrial, which are twenty-two feet in diameter, and ſixty-nine in circumference; they are made of black and white marble, and are inlaid with jaſper and copper. In general, all the chambers are enriched with paintings, carvings, and gildings. While this ſtadt-houſe was building, the old one was ſet on fire, and conſumed with all the archives and regiſters. Under the ſtadt-houſe is a prodigious vault, wherein is kept the bank of Amſterdam, where there is a vaſt quantity of ingots both of gold and ſilver, as alſo bags, which are ſuppoſed to be full of money. The doors are proof againſt petards, and are never opened but in the preſence of one of the burgomaſters. The priſons for debtors and criminals are likewiſe under the ſtadt-houſe; as alſo the guard room for the citizens, wherein the keys of the city are locked every night. At the end of the great hall is the ſchepens or aldermens chamber, where civil cauſes are tried. Beſides theſe, there are the chambers of the ſenate and council, the burgo-maſters chamber, the chambers of accounts, &c. In the ſecond ſtory is a large magazine of arms; and on the top of the building are ſix large ciſterns of water, which may be conveyed to any room in the houſe in caſe of fire, to prevent which the chimnies are lined with copper. The bourſe, or exchange, where the merchants aſſemble, is all of free-ſtone, and built upon two thouſand wooden piles; its length is about two hundred feet, and its breadth one hundred and twenty-four; the galleries are ſupported by twenty-ſix marble columns, upon each of which are the names of the people that are to meet there; they are all numbered, and there is a place fixed for every merchandiſe under ſome one of theſe numbers. On the right hand of the gate is a ſuperb ſtaircaſe, which leads to the galleries, on one ſide of which there are ſeveral ſhops, and on the other a place to ſell clothes. It is not unlike the royal exchange in London. The houſe belonging to the Eaſt-India company contains large magazines, full of the different ſorts of commodities brought from the Eaſt-Indies.

AMULET, a charm or preſervative againſt miſchief, witchcraft, and diſeaſes. The ancients of all nations were extremely fond of amulets; but the preſent philoſophy has pretty well baniſhed theſe and other impoſitions of the ſame kind from the world.

* AMYMONE, in fabulous hiſtory, the daughter of Denaus, who, as ſhe was ſhooting in the woods, wounded a ſatyr, who upon this attempted to raviſh her; but imploring the aid of the Gods, Neptune came to her aſſiſtance, ſaved her from the ſatyr, but deflowered her himſelf, and by him ſhe had Nauplius.

ANA, among phyſicians, denotes an equal quantity of the ingredients that immediately precede it in preſcription.

ANABAPTISTS, in eccleſiaſtical hiſtory, a ſect of proteſtants that ſprung up in Germany about the year 1521, juſt after the reformation of Luther. They at firſt preached up an entire freedom from all ſubjection to the civil power; but their principal tenet, and that from whence they take their name, conſiſts in re-baptizing all converts to their ſect, and condemning infant-baptiſm. The fanaticiſm of this ſect roſe to an amazing height, and many places ſuffered ſeverely, particularly the town of Munſter, which they ſeized; and one John of Leyden, the king of this New Jeruſalem, defended himſelf in it as long as poſſible; but the place was at length taken, and that ringleader of the anabaptiſts put to death in the year 1536. They were, however, ſome time after pretty well cured of their principal errors; ſo that they no longer pretended to inſpiration; no longer oppoſed magiſtrates; nor preached up a freedom from all ſubjections, a community of goods, and the like. They ſupported their principal tenet from the following words of our Saviour, “He that “believeth, and is baptized, ſhall be “ſaved.” Now, as adults alone are capable of believing, they argued, that adults only were fit to be baptized. Calvin, and other writers againſt them, had recourſe to the practice of the primitive church, which is clearly on the ſide of infant baptiſm.

tiſm. It may be neceſſary to add, that the anabaptiſts of England are not included in the above deſcription ; for except their rejecting infant-baptiſm, they differ very little from the other proteſtant diſſenters, as may be ſeen in a Confeſſion of Faith, publiſhed in the year 1689, by the repreſentatives of their congregation.

ANACAMPSEROS, *Orpine, Live-ever*, or *Roſe-root*, in botany, the name of a plant. It is never given now inwardly, and but ſeldom employed outwardly, tho' it is ſaid to heal freſh wounds, and cleanſe ulcers. The juice is, however, commended by Hoffman againſt ulcers of the womb.

ANACARDIUM, the name of two ſpecies of trees, diſtinguiſhed by the epithets *occidentale* and *orientale*. They are both of the claſs of the *Pruniferæ* of Mr. Ray.

ANACARDIUM *Occidentale* is the fruit of the acajou or caſhew-nut-tree.

ANACARDIUM *Orientale* is the fruit of a large tree found only in the Eaſt-Indies.

ANACATHARTICS, medicines that promote an anacatharſis, or diſcharge of noxious humours either by vomit or ſpitting.

ANACORETS, or ANCHORETS, in eccleſiaſtical hiſtory, a ſort of monks in the primitive Chriſtian church ; ſo called from their retiring from ſociety, and living in private cells in the wilderneſs. Such were Paul and Anthony, and Hilarion, the firſt founders of the monaſtic life in Egypt and Paleſtine. Some of them lived in caves, and St. Chryſoſtom tells us the monks of Mount Caſius, near Antioch, did ; and others in little tents or cells.

ANACHRONISM, an error in chronology, whereby an event is placed earlier than it really happened ; but it is often uſed to imply any chronoligical miſtake.

* ANACREON, a very excellent Greek poet, born at Teos, a city of Ionia, lived about five hundred and thirty-two years before the Chriſtian æra. Polycrates, tyrant of Samos, invited him to his court, and made him ſhare with him in his buſineſs and his pleaſures. He had a delicate wit, as may be judged from the inexpreſſible beauties and graces in his works ; he was very fond of pleaſure ; was of an amourous diſpoſition, and addicted to drunkenneſs ; yet notwithſtanding his debaucheries, he lived to the age of eighty-five. We are told, that in his old age he lived upon dried grapes, and that he was at laſt choaked by a grape ſtone ſticking in his throat. His poems, which are extant, were reſcued from oblivion by Henry Stevens, and are univerſally admired. His beauty and chief excellence, ſays Madam Dacier, lay in imitating nature, and in following reaſon, ſo that he preſented to the mind no images but what were noble and natural. The odes of Anacreon, ſays Rapin, are flowers, beauties, and perpetual graces ; it is familiar to him to write what is natural and to the life, he having an air ſo delicate, ſo eaſy, and ſo graceful, that among all the ancients there is nothing comparable to the method he took, nor to that kind of writing he followed. He flows ſoft and eaſy, every where diffuſing the joy and indolence of his mind through his verſe, and tuning his harp to the ſmooth and pleaſant temper of his ſoul.

ANACREONTIC *Verſe*, in ancient poetry, a kind of verſe ſo called from its being invented, by the poet Anacreon. It conſiſts of three feet and a half, uſually ſpondees and iambuſes, and ſometimes of anapeſts.

ANADIPLOSIS, in rhetoric and poetry, implies a repetition of the laſt word of a line, or a cloſe of a ſentence, in the beginning of the next. As the following verſes of Virgil :

Sit Tityrus, Orpheus,
Orpheus in ſylvis, &c.

ANADIPLOSIS, among phyſicians, implies the return of the cold fit in a ſemi-tertian ague, before the fit is entirely ended.

ANAGALLIS, *Pimpernel*, in botany, the name of two ſpecies of plants reſembling chickweed, and diſtinguiſhed by the epithets *mas* and *fœmina*.

ANAGALLIS *Mas*, male pimpernel, has a white ſingle root, with a few fibres, its ſtalks lie on the ground, and its flower is of a purple red colour. It is one of the ſleeping plants, or thoſe whoſe flowers open about eight o'clock in the morning, and cloſe again ſoon after noon.

ANAGALLIS *Fœmina*, female pimpernel, differs only from the former in the colour of the flower, which is blue, and in being more ſcarce than the former, which is common in our corn-fields. The male pimpernel is uſed as a ſallad and a pot-herb in many parts of England ; tho' it is by ſome recommended as an excellent medicine againſt madneſs and the epilepſy, provided four ounces of the juice be given thrice a-day ; but it is not now depended upon for any ſuch purpoſe.

ANAGRAM, a tranſpoſition of the letters of ſome name, whereby a new word is formed from the ſame letters, to the advantage or diſadvantage of the perſon named.

ANAGRAMATIST, a compoſer of anagrams.

ANAITIS, in mythology, a pagan goddeſs particularly worſhipped by the Armenians. The greateſt men in the country dedicated their daughters to her ſervice, who thought it an honour to proſtitute themſelves to all thoſe who came to ſacrifice to this falſe deity; after which they were eagerly courted in marrige, as being thought to have acquired an extraordinary ſanctity thereby. Upon the feſtival of this idol, the men and women met in crouds together, and intoxicated themſelves with wine. The reaſon of the inſtitution of the feſtival was this: Cyrus having undertaken an expedition againſt the Sacæ, and being beaten, fled with his army; but afterwards encamping in the place where he had left his baggage, he refreſhed his army, and then counterfeited a flight. The Sacæ, purſuing him, and finding the enemy's camp deſerted, but repleniſhed with wine and proviſions, eat and drank till they had quite intoxicated themſelves. Cyrus returning, ſlew them all, and conſecrated that day to the goddeſs.

ANALEMMA, a very ancient aſtronomical inſtrument, the conſtruction of which conſiſts of an orthographic projection of the ſphere upon the plane of the meridian, together with a moveable horizon and index. Its uſe is for finding the time of the ſun's riſing and ſetting, the length of the longeſt day in any latitude, and the hour of the day. The analemma is alſo of uſe among dialiſts, for delineating the various ſorts of furniture upon ſolar dials. See PROJECTION of the ſphere, and DIALLING.

ANALEPTICS, in pharmacy, ſuch medicines as are proper for nouriſhing the body when weakened.

ANALOGICAL, belonging to, or partaking of the nature of analogy. An analogical ſyllogiſm is that which is founded on the analogy between the premiſes.

ANALOGY, a certain relation ſubſiſting between two or more things, which in other reſpects are entirely different.

ANALOGY, among mathematicians, portion, or a ſimilitude of ratios. See PROPORTION and RATIO.

ANALOGY, in grammar, the correſpondence which a word or phraſe has to the genius and received forms of a language.

ANALYSIS, in a general ſenſe, implies the reſolution of ſomething compounded into its original and conſtituent parts.

ANALYSIS, in mathematics, the method of reſolving problems by means of algebraical equations, whence we often find that theſe two words *analyſis* and *algebra* are uſed as ſynonimous.

Analyſis, under its preſent improvements, muſt be allowed the apex or height of all human learning; it is this method which furniſhes us with the moſt perfect examples of the art of reaſoning, gives the mind an uncommon readineſs at deducing and diſcovering, from a few data, things unknown; and by uſing ſigns for ideas, preſents things to the imagination, which otherwiſe ſeemed out of its ſphere: by this, geometrical demonſtrations may be greatly abridged, and a long ſeries of argumentations, wherein the mind cannot without the utmoſt effort and attention diſcover the connection of ideas, are hereby converted into ſenſible ſigns, and the ſeveral operations required therein, effected by the combination of thoſe ſigns. But, what is more extraordinary, by means of this art, a number of truths are frequently expreſſed by a ſingle line, which in the common way of explaining and demonſtrating things would fill whole volumes. Thus, by mere contemplation of one ſingle line, whole ſciences may ſometimes be learnt in a few minutes time, which otherwiſe could ſcarce be attained many years.

ANALYSIS, is divided, with regard to its object, into that of *finites* and *infinites.*

ANALYSIS *of finite Quantities*, is what we otherwiſe call ſpecious arithmetic or algebra. See ALGEBRA.

ANALYSIS *of Infinites*, called alſo the *New* ANALYSIS, is particularly uſed for the method of fluxions, or the differential calculus. See FLUXIONS.

ANALYSIS, in logic, ſignifies the method of tracing things backwards to their ſource, and of reſolving knowledge in its original principles.

This is alſo called the method of reſolution, and ſtands oppoſed to the ſynthetic method, or that of compoſition.

The art of logical analyſis conſiſts chiefly in combining our perceptions, claſſing them together with addreſs, and contriving proper expreſſions for conveying our thoughts, and repreſenting the ſeveral diviſions, claſſes, and relations.

ANALYSIS, in rhetoric, the ſtripping a diſcourſe of all its gaudy dreſs of tropes and figures; or, ſhewing what uſe the orator has made of theſe decorations, in order to embelliſh and ſet off every part of his oration to the beſt advantage.

ANALYSIS, in chemiſtry, the decompoſing mixed bodies, or ſeparating their component principles, in order to obtain each of them unmixed with the other.

ANALYSIS *of Vegetable Subſtances.* The moſt complete analyſis of a plant is obtained by fire, thus a plant being expoſed to a very gentle heat in a diſtilling veſſel, ſet in balneum Mariæ, yields a water called ſpiritus rector, which retains its perfect ſmell, but is ſo very volatile, that it is difficult to ſubject it to the experiments neceſſary for diſcovering its properties.

If, inſtead of diſtilling the plant in balneum Mariæ, it be diſtilled over a naked fire, with the precaution of putting a quantity of water into the diſtilling veſſel along with it, to prevent its ſuffering a greater heat than that of boiling water, all the eſſential oil contained in that plant will riſe together with the above water: and as no eſſential oil can be extracted after the ſpiritus rector has been drawn off, there is reaſon to think that the volatility of theſe oils is owing to that ſpirit.

ANALYSIS *of Animal Subſtances.*--- Succulent animal ſubſtances, ſuch as new killed fleſh, yield by expreſſion a juice or liquid, which is no other than the phlegm, replete with all the principles of the animal body, except the earth, of which it contains but little. The hard or dry part, ſuch as the horns, bones, &c. yield a ſimilar juice by boiling them in water. Theſe juices become thick, like a glue or jelly, when their watery parts are evaporated; and in this ſtate they are true extracts of animal matters. Theſe juices afford no chryſtals of eſſential ſalt, like thoſe obtained from vegetables, and ſhew no ſign either of an acid or an alkali.

ANALYSIS *of Mineral Subſtances.*--- Minerals differ greatly from vegetables, and animals; they are not near ſo complex as thoſe organized bodies, and their principles are much more ſimple; whence it follows, that theſe principles are much more cloſely connected, and that they cannot be ſeparated without the help of fire, which, not having on their parts the ſame action and the ſame power, as on organized bodies, hath not the ſame ill effect on them. Theſe bodies are compound maſſes or combinations of ſeveral bodies; that is, metallic ſubſtances as they are found in the bowels of the earth, united with ſeveral ſorts of ſand, ſtones, earths, ſemi-metals, ſulphur, &c. When the metallic matter is combined with other matters, in ſuch a proportion to the reſt that it may be ſeparated from them with advantage and profit, theſe compounds are called ores: when the caſe is otherwiſe, they are called pyrites and marcaſites; eſpecially if ſulphur or arſenic be predominant therein, which often happens. See ORES and ASSAYING.

ANALYSIS, among grammarians, the explaining the etymology, conſtruction, and other properties of words.

ANALYSIS is alſo uſed to imply a brief but methodical illuſtration of the principles of a ſcience; in which ſenſe it ſignifies the ſame with ſynopſis.

ANALYSIS likewiſe denotes a table of the principal heads of a continued diſcourſe, diſpoſed in their proper order.

ANALYTIC, or ANALYTICAL, that belongs to, or partakes of, the nature of analyſis.

Thus we ſay, an analytical demonſtration, analytical proceſs, analytical table or ſcheme, analytical method of inveſtigation, &c. The analytic method ſtands oppoſed to the ſynthetic. In natural philoſophy, as in mathematics, the inveſtigation of difficult things by the analytic method ought to precede the method of compoſition. This analyſis conſiſts in making experiments and obſervations, and in drawing general concluſions therefrom by induction; and admitting of no objections againſt the concluſions, but ſuch as are drawn from experiments, and other certain truths: The ſynthetic method conſiſts in aſſuming the cauſes diſcovered and received as principles, and by them explaining the phænomena proceeding from them, and proving the explanations. See SYNTHESIS.

ANALYTICS, *Analytica*, the ſcience and uſe of analyſis.

To the modern analytics principally belongs algebra and fluxions, an hiſtorical account of which, ſee under the articles ALGEBRA, and FLUXIONS.

ANAMORPHOSIS, in perſpective painting, a monſtrous projection or repreſentation of an image on a plane or curve ſurface, which, beheld at a proper diſtance, ſhall appear regular and in proportion.

The word is derived from the Greek, and ſignifies to reform, or bring into a new ſhape.

To delineate an anamorphoſis upon a plane.---Draw the ſquare A B C D, (plate V. *fig.* 2.) of a bigneſs at pleaſure, and ſubdivide it into a number of little ſquares. In this ſquare, called the craticular prototype, let the image to be repreſented deformed, be drawn; then draw the line *a b* (*fig.* 3.) equal to A B, and divide it into the ſame number of equal parts as the ſide of the prototype A B; erect the perpendicular E V in the middle of *a b*, ſo much the longer as the deformity of the image is to be greater. Draw V S perpendicular to E V, ſo much the ſhorter as you would have the image appear more deformed. From each point of diviſion draw ſtraight lines to V, and join the points *a* and S, by the right line *a* S. Through the points *d e f g*, draw right lines parallel to *a b*, then will *a b c d* be the ſpace in which the monſtrous projection is to be delineated: this ſpace is called the craticular ectype. Laſtly, in every areola, or ſmall trapezium, of the ſpace *a b c d*, draw what appears delineated in the correſpondent areola of the ſquare A B C D; and thus you will obtain a deformed image, which will appear in juſt proportion to an eye diſtant from it the length F V, and raiſed above its height V S. An image may be deformed mechanically, if you place it, having little holes made here and there in it with a needle, againſt a candle, and obſerve where the rays going through theſe holes, fall on a plane or curve ſurface; for they will give the correſponding points of the image to be deformed.

ANANAS, the pine-apple, in botany, a genus of plants, whoſe flower conſiſts of one funnel-ſhaped leaf divided into three parts, which afterwards become a fleſhy fruit, full of juice; the ſeeds of which are very ſmall, and almoſt kidney-ſhaped. Tournefort has enumerated three, and Mr. Miller ſix, ſpecies of this plant.

The pine-apple, ſays Mr. Miller, ſo called from its reſembling the cones of the European pine tree, is a native of the torrid zone; but has for ſome years been cultivated here in tolerable perfection. The plant, in its native climate, ſeldom grows to above three feet in height, and terminates in a flower reſembling a lilly, but of ſo elegant a crimſon as to dazzle the eye. The pine-apple makes its firſt appearance in the center of the flower, about the ſize of a nut; and as this increaſes, the luſtre of the flower fades, and the leaves expand themſelves to make room for it, and ſerve it at once for a baſe and ornament. On the top of the apple itſelf is a crown or tuft of leaves, like thoſe of the plant, and of a very lively blue-green colour. This crown grows in proportion with the fruit, till both have attained their utmoſt magnitude. As ſoon as this happens the fruit begins to ripen, and its green changes into a bright ſtraw-colour: during this alteration of colour, the fruit exhales ſuch a fragrancy as to diſcover it, though concealed from ſight. While it continues to grow, it ſhoots out, on all ſides, little thorns and prickles, which, as it approaches towards maturity, dry and ſoften, ſo that the fruit is gathered without the leaſt inconvenience.

Theſe plants are propagated by planting the crowns which grow on the fruit, or the ſuckers which are produced either from the plants, or under the fruit, either of which I have found to be equally good; although, by ſome perſons, the crown is thought preferable to the ſuckers, as ſuppoſing it will produce fruit ſooner than the ſuckers, which is certainly a miſtake; for by conſtant experience I find the ſuckers (if equally ſtrong) will fruit as ſoon, and produce as large fruit as the crowns.

The ſuckers and crowns muſt be laid to dry in a warm place for four or five days, or more (according to the moiſture of the part which adhered to the old plant or fruit) for, if they are immediately planted, they will rot. The certain rule of judging when they are fit to plant, is by obſerving if the bottom is healed over, and become hard; for if the ſuckers are drawn off carefully from the old plants, they will have a hard ſkin over the lower part; ſo need not lie ſo long as thoſe which by accident may have been broken. But whenever a crown is taken from the fruit, or the ſuckers from the old plants, they ſhould be immediately diveſted of their bottom-leaves, ſo high as to allow depth for their planting: ſo that they may be thoroughly dry and healed in every part, leſt, when they receive heat and moiſture, they ſhould periſh, which often happens when this method is not purſued. If theſe ſuckers or crowns are taken off late in the autumn, or during the winter, or early in the ſpring, they ſhould be laid in a dry place in the ſtove, for a fortnight or three weeks before they are planted; but in the ſummer-ſeaſon they will be fit for planting in three or four days.

As to the earth in which theſe ſhould be planted, if you have a rich good kitchen garden mould, not too heavy, ſo as to detain the moiſture too long, nor over light and ſandy, it will be very proper for them without any mixture: but, where this is wanting, you ſhould procure ſome freſh earth from a good paſture, which ſhould be mixed with about a third part of rotten neats-dung, or the dung of an old melon or cucumber-bed, which is well conſumed. Theſe ſhould be mixed ſix or eight months at leaſt before they are uſed; but if it be a year, it will be the better; and ſhould be often turned, that their parts may be the better united, as alſo the clods well broken. This earth ſhould not be ſcreened very fine; for, if you only clear it of the great ſtones, it will be better for the plants than when it is made too fine. You ſhould always avoid mixing any ſand with the earth, unleſs it be extremely ſtiff; and then it will be neceſſary to have it mixed at leaſt ſix months or a year before it is uſed; and it muſt be frequently turned, that the ſand may be incorporated in the earth, ſo as to divide its parts: but you ſhould not put more than a ſixth part of ſand; for too much ſand is very injurious to theſe plants.

In the ſummer ſeaſon, when the weather is warm, theſe plants muſt be frequently watered; but you ſhould not give them large quantities at a time. You muſt alſo be very careful that the moiſture is not detained in the pots by the holes being ſtopped; for that will ſoon deſtroy the plants. If the ſeaſon is warm, they ſhould be watered every other day; but, in a cool ſeaſon twice a week will be often enough: and, during the ſummer ſeaſon, you ſhould once a week water them gently all over their leaves, which will waſh the filth off them, and thereby greatly promote the growth of the plants. There are ſome perſons who frequently ſhift theſe plants from pot to pot: but this is by no means to be practiſed by thoſe who propoſe to have large well-flavoured fruit; for, unleſs the pots be filled with the roots, by the time the plants begin to ſhew their fruit, they commonly produce ſmall fruit, which have generally large crowns on them; ſo that the plants will not require to be new-potted oftener than twice in a ſeaſon: the firſt time ſhould be about the end of April, when the ſuckers and crowns of the former year's fruit (which remained all the winter in thoſe pots in which they were firſt planted) ſhould be ſhifted into larger pots; i. e. thoſe which were in half-penny or three-farthings pots, ſhould be put into penny, or at moſt three half-penny pots, according to the ſize of the plants; for you muſt be very careful not to over-pot them, nothing being more prejudicial to theſe plants. The ſecond time for ſhifting them is towards the latter end of Auguſt, or the beginning of September, when you ſhould ſhift theſe plants which are of a proper ſize for fruiting the following ſpring into two-penny pots, which are full large enough for any of thoſe plants. At each of theſe times of ſhifting the plants, the bark-bed ſhould be ſtirred up, and ſome new bark added, to raiſe the bed up to the height it was at firſt made; and, when the pots are plunged again into the bark-bed, the plants ſhould be watered gently all over their leaves, to waſh off the filth, and to ſettle the earth to the roots of the plants. If the bark-bed be well ſtirred, and a quantity of good freſh bark added to the bed, at this latter ſhifting, it will be of great ſervice to the plants; and they may remain in the tan until the beginning of November, or ſometimes later, according to the mildneſs of the ſeaſon, and will not require any fire before that time. During the winter ſeaſon theſe plants will not require to be watered oftener than every third or fourth day, according as you find the earth in the pots to dry: nor ſhould you give them too much at a time; for it is much better to give them a little water often, than to over-water them, eſpecially at that ſeaſon. You muſt obſerve never to ſhift thoſe plants which ſhew their fruit into other pots; for, if they are removed after the fruit appears, it will ſtop the growth, and thereby cauſe the fruit to be ſmaller, and retard its ripening; ſo that many times it will be October and November before the fruit is ripe: therefore you ſhould be very careful to keep the plants in a vigorous growing ſtate from the firſt appearance of the fruit, becauſe upon this depends the goodneſs and ſize of the fruit; for, if they receive a check after this, the fruit is generally ſmall and ill-taſted.

The method of judging when the fruit is ripe, is by the ſmell, and from obſervation; for, as the ſeveral ſorts differ from each other in the colour of their fruit, that will not be any direction when to cut them; nor ſhould they remain ſo long as to become flat and dead, as they alſo do when they are cut long before they are eaten: therefore, the ſureſt way to have this fruit in perfection, is to cut it the ſame day it is eaten; but it muſt be early in the morning, before the ſun has heated the fruit, obſerving to cut the ſtalk as long to the fruit as poſſible, and

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lay it in a cool, but dry place, preſerving the ſtalk and crown to it, until it is eaten. *Miller's Gardener's Dictionary.*

ANAPÆST, in ancient poetry, a foot conſiſting of one long, following two ſhort ſyllables.

ANAPLEROTICS, in pharmacy, ſuch medicines as promote the growth of the fleſh, often called incarnatives.

ANARCHY, a confuſion introduced into a ſtate or kingdom, from its being deſtitute of a head or ruler.

ANATHEMA, among eccleſiaſtical writers, ſignifies whatever is ſeparated, ſet apart, or devoted; but is generally uſed to expreſs the cutting off a perſon from the privileges of ſociety and communion with the church.

ANATHEMA, among the heathens, implied an offering or preſent made to ſome deity, and which was always hung up in the temple.

ANATOMICAL, ſomething belonging to anatomy.

ANATOMY, the art of diſſecting or ſeparating the ſeveral parts of animal bodies, to diſcover their ſtructure and uſe.

The ancients did not make any remarkable progreſs in anatomy. Dr. Harvey publiſhed his Diſcovery of the Circulation of the Blood in 1628, from which time anatomy made a ſurprizing progreſs; and a multitude of writers on that ſcience appeared: Clopton Havers, an Engliſh phyſician, wrote admirably on the bones, and made ſome conſiderable diſcoveries with reſpect to the perioſteum and the marrow. He diſcovered in every joint particular glands, out of which iſſues a mucilaginous ſubſtance, whoſe nature he examined by ſeveral experiments; which, with the marrow ſupplied by the bones, conſtantly oil the joints, that both they and the muſcles might anſwer thoſe ends of motion for which nature deſigned them. This was a very uſeful diſcovery; ſince it has rendered abundance of things, before obſcure in that part of anatomy, plain and eaſy to be underſtood.

Dr. Willis, an Engliſh phyſician, was an excellent anatomiſt, particularly in what relates to the brain, nerves, ſtomach, and inteſtines. Picolhominus had, before him, obſerved that the brain, properly ſo called, and the cerebellum, conſiſted of two diſtinct ſubſtances, an outer aſh-coloured ſubſtance, through which the blood veſſels which lie under the pia mater in innumerable foldings and windings are diſſeminated; and an inner, every where united to it, of a nervous nature, that joins this ſubſtance to the medulla oblongata, which is the original of all the pairs of nerves that iſſue from the brain, and of the ſpinal marrow, that lies under the brain and cerebellum. Dr. Willis greatly improved theſe diſcoveries: he was ſo exact, that he traced this medullary ſubſtance through all its inſertions; examined the progreſs of all the nerves to every part of the body. Hence he not only demonſtrably proved the brain to be the fountain of ſenſe and motion: but alſo, by the courſes of the nerves, the manner how every part of the body conſpires with others to procure any particular motion, was clearly explained. Pequet diſcovered the receptacle of the chyle, and ſhewed, beyond contradiction, that the lacteal veſſels convey the chyle to this receptacle, and proved that it is thence carried by particular veſſels through the thorax, into the left ſubclavian vein, and ſo directly to the heart. Alphonſus Borellus gave a mechanical account of the motion of animals, drawn from the ſtructure of the parts. Marcellus Malphighius was deſervedly celebrated, for his great ſkill and ſingular anatomical reſearches. His induſtry was not confined to the more perfect animal, but was extended to inſects, and even to vegetables, to the great improvement of natural knowledge and his own honour. He diſcovered, by means of his own microſcopes, the texture of the brain, tongue, lungs, liver, and ſpleen; the mechaniſm of the reins was wholly unknown till Malpighius found it out; and by that means effectually confuted ſeveral notions, before entertained of ſome ſecondary uſes of theſe parts, by proving that every part of the kidneys is immediately and wholly ſubſervient to that ſingle operation of freeing the blood from its ſuperfluous ſerum and ſalts. Frederic Ruyſch greatly contributed to the improvement of anatomy. This gentleman from his infancy, devoted himſelf to phyſic, and began his firſt reſearches with the materia medica. The virtue of plants, the ſtructures of animals, the qualities of mineral bodies, chemical operations, and anatomical diſſections, were the objects that firſt ſtruck his fancy, and engaged his attention. Swammerdam having diſcovered a method of injecting the veſſels with a certain matter, communicated his diſcovery to Ruſch, who greatly improved it; and diſcovered a multitude of things before unknown.

Leuwenhoek obliged the world with a great number of diſcoveries relative to anatomy, by means of his microſcopes.

Several other ingenious anatomiſts followed him, and carried the ſcience to a great degree of perfection.

Comparative ANATOMY, that which is employed in examining and comparing the bodies of brutes.

ANAXIMANDRIANS, the followers of Anaximander, the firſt of the philoſophical atheiſts, who admitted of no other ſubſtance in nature but body.

ANCHISES, in fabulous hiſtory, was a Trojan prince, the ſon of Capys, was ſo agreeable in the eyes of Venus, that ſhe offered herſelf to him in the form of a beautiful young woman, deſiring him to preſent her to his relations, in order to have their marriage ſpeedily ſolemnized; but he telling her, that nothing ſhould prevent his enjoying her on the ſpot, ſhe took him at his word, and they went to bed; but towards evening, Anchiſes fell aſleep, and at his waking was ſenſible that he had lain with a goddeſs, and apprehending that this would ſhorten his days, was under great concern; but Venus encouraged him; told him that ſhe ſhould bear him a ſon, who ſhould be called Æneas; but told him that if he ever boaſted of the favour ſhe had granted him, he would be thunder ſtruck by Jupiter. Some time after, when he was drinking with his friends the ſecret eſcaped him, on which it is ſaid, that he was ſtruck by thunder, and that this occaſioned the loſs of his ſight.

ANCHOR, a ſtrong heavy inſtrument of iron, ſunk for a ſhip to moor or retain her in her road, bay, or harbour. It is compoſed of a ſhank or ſhaft, two arms, two flukes, a ſtock, and a ring. Every ſhip has or ſhould have three principal anchors, with a cable to each, viz. the ſheet, the beſt-bower, and ſmall-bower; there are, beſides, ſmaller anchors for tranſporting or removing of a ſhip from place to place in a harbour or river, where there may not be room or wind for ſailing; ſuch as the ſtream anchor, the kedge and grappling, which laſt is however generally uſed for the boats.

For the ſatisfaction of the reader, we have added a perſpective view of an anchor on plate 1, *fig.* 5. where *a* is the ring to which the cable is faſtened, *b c* the beam or ſhank, *d e* the arm, or that which runs into the ground, *e f* the fluke or palm, and *g h* the ſtock.

ANCHOR, in architecture, a ſort of carving reſembling an anchor, generally placed as part of the enrichments of the boultins of Tuſcan, Doric, and Ionic capitals, and alſo of the boultins of the Doric, Ionic, and Corinthian cornices; anchors and eggs being carved alternately through the whole building.

ANCHOR, in heraldry, is uſed as an emblem of Hope.

ANCHORAGE, a place where a ſhip may ſafely anchor.

ANCORAGE, in law, a duty taken of ſhips for the uſe of the port or harbour where they come to an anchor.

ANCHORED, in heraldry, is ſaid of a croſs when its four extremities reſemble the fluke of an anchor.

ANCHOVY, in natural hiſtory, a ſmall fiſh, common in the Mediterranean, nearly reſembling the common ſprat.

ANCHUSA, *Alkanet*, in botany, a ſpecies of bugloſs, differing chiefly from the common bugloſſes in the red colour of its roots. It grows wild about Montpelier and the eaſtern countries, and is cultivated in ſome of our gardens; but the roots produced in this climate are paler coloured than thoſe we receive from abroad.

Alkanet root has little or no ſmell, and ſcarcely any taſte; nor is it regarded as a medicine. Its chief uſe is in colouring oils, plaiſters, lip-ſalves, &c. which receive a fine deep red from one fortieth their weight of the root.

ANCLE, in anatomy; ſee TALUS.

ANCON, in anatomy, the gibbous eminence or flexure of the cubit.

ANCONES, in architecture, the corners or coins of walls, croſs beams, or rafters. Vitruvius calls the conſoles by the ſame name.

ANCONA, in mineralogy, denotes a bloom of iron faſhioned into a flat bar, about three feet long, with a ſquare rough knot at each end.

ANCYLE, in antiquity, a kind of ſhield which, as the Romans pretended, fell from heaven in the reign of Numa Pompilius; and at the ſame time it was ſignified by a voice that Rome ſhould be miſtreſs of the world, as long as ſhe preſerved this ſacred buckler. It was therefore kept with the utmoſt care in the temple of Mars, under the direction of twelve prieſts, and leaſt any ſhould attempt to ſteal this precious piece of armour, eleven others were made ſo like it, as not to be diſtinguiſhed from the original. Theſe bucklers were carried annually in proceſſion round the city of Rome.

ANCHYLE, or ANCYLOSIS in ſurgery, implies a diſtortion or ſtiffneſs of the joints, cauſed by a ſettlement of the hu-

humours, or a diſtention of the nerves; and therefore remedies of a mollifying and relaxing nature are required.

ANDANTI, in muſic, ſignifies that the notes are to be played diſtinctly.

* ANDES, a large chain of mountains in South America, which run north and ſouth from the moſt northern part of Peru to the ſtraits of Magellan, between three and four thouſand miles, and are the longeſt and the moſt remarkable in the world. They form two ridges, the lowermoſt of which are overſpread with woods and groves, and the uppermoſt are covered with everlaſting ſnow. Thoſe that have been to the top, affirm that the ſky is always ſerene and bright, the air cold and piercing, and yet ſo thin that they were ſcarce able to breathe, and the reſpiration was much quicker than ordinary; and this is attended with reaching and vomiting. When they looked downwards, the country was hid by the clouds that hovered on the mountain's ſides. There are regular plains on the top, of hundreds of miles in length, which being elevated above the regions of the clouds, are illuminated with the pureſt and moſt vivid light. There are no winds, no fogs, no graſs, plant, herb or tree; and it is ſo cold, that a traveller would be in danger of his life, unleſs he was well cloathed. Sometimes men and horſes are found dead with cold, with little or no alteration in a great number of years; theſe places being inacceſſible to heat, rain, and inſects. The mountains juſt mentioned, which have been frequently aſcended, are much inferior in height to many others in this enormous chain. The account given of the mountain called Pichincha, by the mathematicians ſent by the kings of France and Spain, to make obſervations in relation to the figure of the earth, differs in ſeveral particulars from thoſe juſt mentioned. They found, that though it is almoſt directly under the equator, the cold on its top is extremely intenſe; the wind was violent, and they were frequently involved in ſo thick a fog, that an object at ſix or eight paces diſtance was ſcarcely diſcernable. The air grew clear by the clouds deſcending nearer to the ſurface of the earth, when they, on all ſides, ſurrounded the mountain to a vaſt diſtance, repreſenting the ſea with their rock ſtanding like an iſland in the centre. When this happened, they heard the dreadful noiſe of the tempeſts, that diſcharged themſelves on the city of Quito, and the neighbouring country. Looking down, they ſaw the lightening iſſue from the clouds, and heard the thunder roll far beneath them. While the lower parts were involved in thunder and rain, they enjoyed a delightful ſerenity; the wind was abated, the ſky clear, and the enlivening rays of the ſun moderated the ſeverity of the cold. But, when the clouds roſe, their thickneſs rendered reſpiration difficult; ſnow and hail fell continually, and the wind returned with all its violence; ſo that it was impoſſible to overcome entirely the fear of being, together with their hut, blown down the precipice, or of being buried in it, by the daily accumulations of ice and ſnow. There is a road through the mountains, one thouſand miles in length.

ANDREW, or *Knights of St.* ANDREW, an order of knighthood inſtituted in Scotland, generally called the order of the thiſtle. See plate V. *fig.* 4.

* ANDREW (St.) one of the twelve apoſtles, and brother of St. Peter. He was at firſt one of the diſciples of John the Baptiſt; who brought him to the knowledge of Chriſt, by ſaying, “See “the Lamb of God, who taketh away “the ſins of the world;” and afterwards Andrew told Peter that he had ſeen the Meſſiah, and brought him to Chriſt. St. Andrew is thought to have preached the Goſpel in Scythia, where he ſuffered martyrdom. He is commonly repreſented faſtened to two pieces of wood acroſs each other in the form of an X; but his being thus crucified has no foundation in antiquity.

ANDREW's (St.) This was once the metropolis of Scotland, where the firſt univerſity was founded. The cathedral church, which was reckoned a very fine one, is now in ruins. It is ſeated in a plain, having a proſpect of the German Ocean. The greateſt ornament is the univerſity, conſiſting of three colleges, the Old College, St. Leonard's College, and the New College. Each has a principal, and out of theſe a rector is choſen yearly. The ſtudents wear red gowns. The houſes of this town are much decayed, though they are built of free-ſtone, the inhabitants having neither manufactures nor trade; though they are ſaid to exceed four thouſand. The church of the Holy Trinity is an ancient ſtately edifice, built in the form of a croſs; and at its weſt end is a handſome ſpire. The other two churches are now only chapels to the colleges. The harbour has ſuffered very much by the encroachments of the ſea, and is now very dangerous; and though there was a brief granted for the reparation

ration of it in 1728, yet it proved inſufficient for the purpoſe. It is thirty miles north-eaſt of Edinburgh, and forty-ſix eaſt-north-eaſt of Stirling. Long. 2. 25. W. Lat. 56. 18. N.

St. ANDREW's-DAY, a feſtival obſerved by the church on the 30th of November, in honour of the apoſtle St. Andrew.

* ANDROGEUS, in fabulous hiſtory, the ſon of Minos, king of Crete, was murdered by the Athenian youth and thoſe of Megara, who envied his being always victor at the Attic games. But Minos having taken Athens and Megara, obliged the inhabitants to ſend him an annual tribute of ſeven young men and as many virgins, to be devoured by the Minotaur ; but Theſeus delivered them from that tribute.

* ANDROMACHE, wife of Hector, mother of Aſtyanax, and daughter of Etion, king of Thebes in Cilicia. After the death of Hector and the deſtruction of Troy, ſhe married Pyrrhus, and then Helenus the ſon of Priam, with whom ſhe reigned over part of Epirus.

ANDROMEDA, in aſtronomy, the name of a conſtellation of the northern hemiſphere, repreſenting a woman chained. The number of ſtars in this conſtellation, in Ptolemy's catalogue, are 23 : in Tycho's 22 ; in Bayer's 27 ; and in Mr. Flamſtead's 84.

* ANDROMEDA, in fabulous hiſtory, was the daughter of Cepheus and Caſſiopea, ſhe was faſtened to a rock by the nymphs, in order to be devoured by a ſea-monſter ; but being ſeen by Perſeus, he looſened her, and brought her to her father, who gave her to him in marriage.

ANDROSACE, in botany, a diſtinct genus of plants, the flower of which conſiſts of one petal, broad at the top, and divided into five ſegments. Its fruit is a globular and ſingle capſule, containing a number of ſmall oval or roundiſh ſeeds fixed to a placenta,

ANECDOTE, among hiſtorians, implies ſome fact not formerly publiſhed to the world, or very little known.

ANEMOMETER, in mechanics, a machine for meaſuring the force or velocity of the wind,

ANEMONE, the wind-flower, in botany, a genus of plants, of which there are two ſpecies, the cultivated and the wild ; and both theſe are divided into ſeveral others, eſpecially the former, many of which are kept in gardens for the beauty of their flowers.

ANEMOSCOPE, a machine that ſhews either the courſe or velociy, of the wind,

The machine which ſhews the courſe of the wind, or from what point of the compaſs it blows, conſiſts of an index moving about on an upright circular plate, like the dial of a clock, on which the thirty-two points of the compaſs are drawn inſtead of the hours. The index which points to the diviſions on the dial is turned by a horizontal axis, having a trundle-head at its internal extremity. This trundle-head is moved by a cog-weel in a perpendicular axis, on the top of which a vane is fixed that moves with the courſe of the wind, and puts the whole machine in motion. The whole contrivance is extremely ſimple, and nothing required in the conſtruction, but that the number of cogs in the wheel, and rounds in the trundle-head be equal ; becauſe it is neceſſary that, when the vane moves entirely round, the index of the dial alſo makes a compleat revolution. An anemoſcope of this kind is placed in one of the turrets of the queen's palace, in St. James's Park.

The anemoſcope, calculated for indicating the force or velocity of the wind, is the ſame with what moſt writers call an anemometer. There is another, contrived by the late Mr. Pickering, and publiſhed in the *Philoſophical Tranſactions*, No. 473.

ANETHUM, *Dill*, in botany, an annual umbelliferous plant, with very finely divided leaves, and yellow flowers; It is a native of the warmer climates, cultivated with us in gardens, flowers in July, and in September ſheds its ſeeds, by which the plant is plentifully propagated.

The ſeeds of dill have a moderately warm pungent taſte, and an aromatic ſmell, but not of the moſt agreeable kind ; they are given as carminatives, to the quantity of a dram at a time, in flatulent cholics, and indigeſtion from a laxity of the organs and viſcidity of the humours. The leaves are weaker and leſs grateful than the ſeeds ; the roots have nothing of their flavour.

ANEURISM, in ſurgery, a tumour ariſing from the dilataton, or the rupture of the coats of an artery. Aneuriſms uſually proceed from an artery being accidentally cut or pricked in bleeding, or from a preternatural diſtention, or a corroſion of its coats, &c.

ANGEL, a name applied to thoſe ſpiritual intelligent beings who are ſuppoſed to execute the will of the Divine Being in the government of the world. All religions have admitted of the exiſtence of angels. The Greeks and Latins acknowledge them under the names of genii and demons; and in the Alcoran we find frequent mention of them; the profeſſors of the Mahometan religion aſſigning them various orders and degrees, as well as different employments, both in heaven and earth. Nothing is more frequent in Scripture than the miſſions and apparitions of good and bad agels: God ſends them to declare his will, to correct, teach, reprove, and comfort: God gave the law to Moſes, and appeared to the old patriarchs by the mediation of angels, who repreſented him and ſpoke in his name. The exiſtence of angels is ſuppoſed in all religions. Though the Jews in general believe the exiſtence of angels, there was a ſect among them (the Sadducees) who denied the exiſtence of all ſpirits whatever, God only excepted: and yet the Samaritans and Garaites, whom the Jews repreſent as Sadducees, acknowledged ſuch beings. It has been queſtioned, whether the ancient Hebrews paid divine homage to angels or not. The form of benediction which Jacob uſed in bleſſing the ſons of Joſeph, (the angel which redeemed me from all evil bleſs the lads) may ſeem to imply that they did. The rabbins, in gloſſing upon the text, obſerve, that the prayers of their anceſtors were not directly addreſſed to angels, but it was really God they invoked, when they prayed to them. Though it is an univerſal opinion that angels are of a ſpiritual, incorporeal nature, yet many of the old fathers, miſled by a paſſage in Geneſis where it is ſaid, "That the ſons of God (or the angels) ſaw "the daughters of men, that they were fair, "and they took them wives of all which "they choſe," imagined them to be corporeal, and capable of ſenſible pleaſures. Other fathers indeed, and thoſe in great number, have aſſerted angels to be purely ſpiritual. There have been a great many diſputes and varieties of fancy concerning the number, order, nature, and power of angels; moſt of which are not to be reſolved by ſcripture or tradition. The author of the books *De Hierarchia cæleſti*, who wrote about the beginning of the ſixth century, is the firſt who ventures to range the angels into three hierarchies and nine orders. The Jews likewiſe diſtinguiſh them into ſeveral orders, and ſet, as it were, a general at the head of them; they call him Metraton, the ſame with the Chriſtian St. Michael. As to guardian angels, they are very clearly deſcribed in the Old Teſtament. Jacob ſpeaks of the angel who had been his guide in all his journies, and had delivered him out of all his dangers. The Pſalmiſt, in ſeveral places, mentions angels as the protectors of the righteous. In the New Teſtament we hear of St. Peter's angel who ſet him at liberty; and Jeſus Chriſt enjoins us not to deſpiſe little ones, becauſe their angels continually behold the face of God. The Jews, and the very heathens, believed that particular angels were commiſſioned to attend us, and had the care of our conduct. Heſiod, the moſt antient, or at leaſt one of the moſt ancient Greek authors, ſays, that there are good angels upon earth, ſent by Jupiter for the protection of mankind, and to obſerve the good or evil which they practiſe. Plato ſays, that every one of us has two demons, or two genius's, one inclining us to evil, the other directing us to good; though Apuleius ſays, that Plato aſſigned but one demon to every man. Angel, in commerce, a gold coin formerly current in England. It had its name from the figure of an angel repreſented upon it, weighed four pennyweights, and was twenty-three and a half carats fine. It had different values in different reigns; but is at preſent only an imaginary ſum, or money of account, implying ten ſhillings.

ANGELICA, in botany, a large umbelliferous plant, of which there are two ſpecies the wild and the garden, diſtinguiſhed by the epithets *ſylveſtris* and *ſativa*. The former grows wild, in moiſt grounds, in ſeveral parts of England; is perennial, and flowers in July: the latter is cultivated in gardens. They are ſimilar in quality; but the latter is ſuppoſed to be the ſtronger. The garden angelica is naturally a biennial plant; but if the ſtalks are cut down before they run to flower, the roots will ſend forth new heads, and, may, by this means, be continued for many years. The roots are in their greateſt perfection in the ſecond ſpring: they ſhould be thoroughly dried, kept in a dry place and frequently aired, otherwiſe they will grow mouldy, and be eaten by worms. The roots of angelica are one of the principal aromatics of European growth, though not much regarded in the preſent practice. They have a fragrant agreeable ſmell, and a bitteriſh pungent, mixed with a pleaſant ſweetiſh taſte. The other parts of the plant have the ſame taſte and flavour with the roots; but their active principles are far more periſhable. The ſtalks, candied with ſugar, make a very agreeable ſweetmeat.

ANGELICS

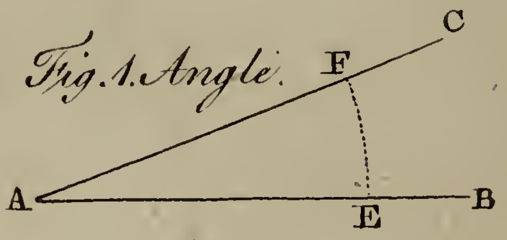


Fig. 1. Angle.

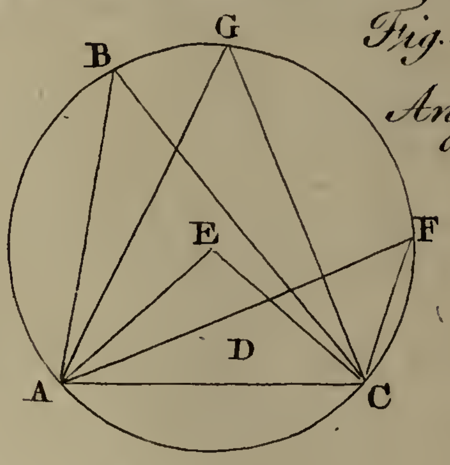


Fig. 5. Angle.

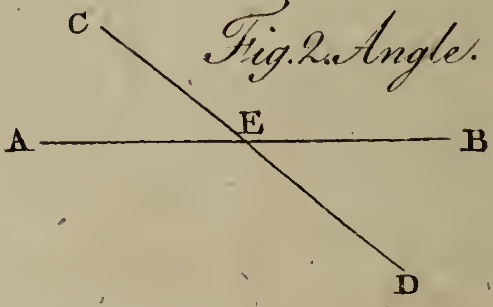


Fig. 2. Angle.

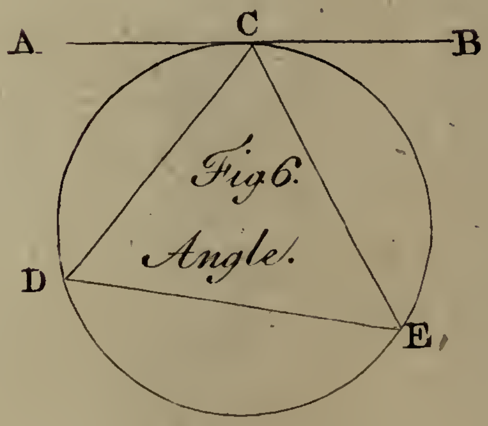


Fig. 6. Angle.

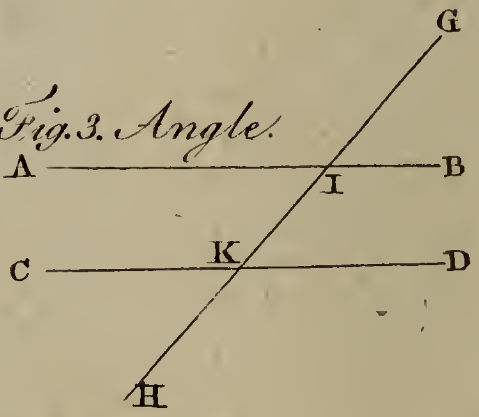


Fig. 3. Angle.

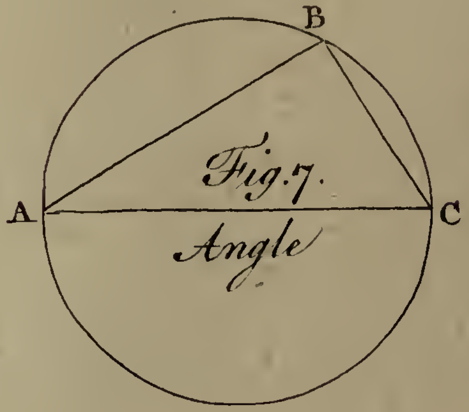


Fig. 7. Angle.

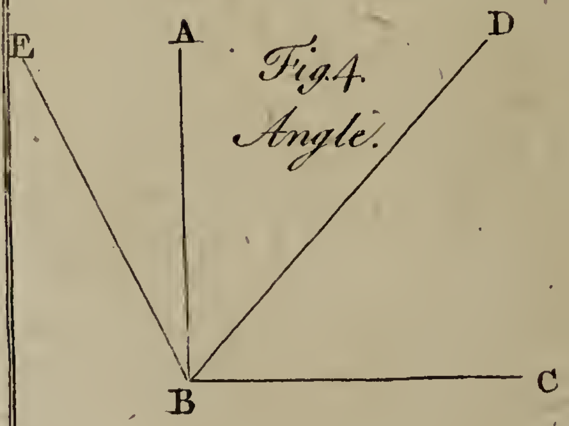


Fig. 4. Angle.

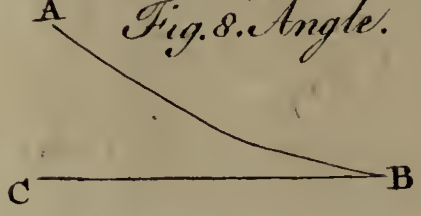


Fig. 8. Angle.

ANGELICS the name of an order of knights inſtituted in 1191, by Angelus Flavius Comneus, emperor of Conſtantinople. This order ſtill ſubſiſts in Italy.

ANGELOT, a gold coin ſtruck at Paris, while ſubject to the Engliſh; ſo called from the figure of an angel, ſupporting the arms of England and France.

ANGER, a violent paſſion of the mind, conſiſting in a propenſity to take vengeance on the author of ſome real or ſuppoſed injury done the offended party.

ANGERONA, in mythology, a pagan deity whom the Romans prayed to for the cure of a diſtemper, called the quinzy, in Latin, *angina.* Pliny calls her the goddeſs of ſilence and calmneſs of mind, who baniſhes all uneaſineſs and melancholy. She is repreſented with her mouth covered, to denote patience and refraining from complaints. Her ſtatue was ſet up, and ſacrificed to, in the temple of the goddeſs Volupia, to ſhew that a patient enduring of affliction leads to pleaſure.

ANGINA, in phyſic, a violent inflammation of the throat, uſually called quinzy. See QUINZY.

ANGIOSPERMA, in the Linnæan ſyſtem of botany, implies thoſe plants of the didynamia claſs, which have their ſeeds incloſed in a capſule or ſeed veſſel.

ANGLE, *Angulus,* in geometry, the mutual inclination of two lines, which meet and form an angle in their point of interſection. Such is the angle B A C, (plate VIII, *fig.* 1.) formed by the right lines A B, A C, meeting in the point A. The lines A B and A C are called the legs of the angle, and point of interſection, the vertex.

ANGLES are either *right*, *acute*, or *obtuſe*.

A right ANGLE is that whoſe legs are perpendicular to each other, as A B C (plate VIII, *fig.* 4.) the arch intercepted between them being exactly 90°.

An Acute ANGLE is that which is leſs than a right angle or 90°, as the angle D B C.

An Obtuſe ANGLE is that which is greater than a right angle, as E B C.

Adjacent ANGLES are ſuch as have the ſame vertex, and one of the legs continued beyond the angular point.

Vertical ANGLES are formed by two right lines interſecting each other. Thus the right lines A B, C D, (*fig.* 2.) by their interſection in E, form the vertical angles A E C, D E B, and A E D, C E B.

Alternate ANGLES are thoſe acute or obtuſe angles formed by a right line cutting two parallel right lines. Thus if A B and C D (*fig.* 3.) are parallel, and G H cuts them in I and K, the angles A I K, D K I, and B I K, I K C, are alternate angles.

The alternate angles are always equal to each other. (18 *Eucl.* 1.)

ANGLE *at the Centre of a Circle*, is an angle in a circle, whoſe vertex is in the centre of that circle.

ANGLE *at the Periphery*, or *in a Segment*, is an angle whoſe vertex is in the periphery, and its legs two chords of the circle. Thus A B, B C, are two chords of the circle A B C D, (Plate VIII, *fig.* 5.) making an angle B at the periphery, which is called an angle in a ſegment.

This angle is always equal to half the angle at the center, ſtanding upon the ſame arch (6 Euclid. 3.) Alſo all angles in a ſegment, ſtanding upon the ſame arch, are equal to one another. Thus the angles A B C, A G C, A F C, are equal, and are each equal to half the angle A E C at the center.

If the right line A B (*fig.* 6.) touch the circle in C, and the chord C D be drawn, then will the angle A C D be equal to any angle C E D, made in the ſegment D E C. (Euclid. 32. 3.)

When the arch is a ſemicircle, the angle will be a right angle. Thus if the arch A B C (*fig* 7.) be a ſemicircle, the angle A B C will be a right angle. When it is greater than a ſemicircle, the angle will be acute; but when leſs, it will be obtuſe. (31 Euclid. 3.)

Spherical ANGLE is an angle formed by two circles of the ſphere.

Mixed Line ANGLE is that comprehended between a right line and a curve line, as the angle A B C (*fig.* 8.)

ANGLE *of the Sun's Poſition*, an angle formed by the meridian, and an azimuth, or other great circle, drawn through the center of the ſun.

ANGLE *of Longitude*, an angle formed at the pole of the ecliptic between the meridian, and a circle of longitude drawn through the center of the object.

ANGLE *of the Courſe*, in navigation; ſee COURSE.

Re-entering ANGLE is any angle in a fortreſs, whoſe point turns inwards, or towards the place; that is, whoſe legs open towards the field.

Salient ANGLE is that which points outwards, or whoſe legs open towards the place.

ANGLE *of the Complement of the Line of Defence* is the angle formed by the interſection of the two complements with each other.

ANGLE *of the Mote*, is formed before the curtain where it is interſected.

ANGLES *of a Battalion*, in military affairs, the laſt men where the ranks and files terminate.

* ANGLESEY, an iſland in the Iriſh Sea, and a county in Wales, which is ſeparated from Caernarvonſhire by a ſtreight or narrow arm of the ſea, called Menea. It was called by the Britons Mon, by the Saxons Moneg, and by the Engliſh Angleſey, or the Engliſh Iſland. It is about twenty-four miles in length, and in the broadeſt parts ſeventeen in breadth. It contains ſix hundreds, ſeventy-four pariſhes, and ſends two members to parliament, one whereof is for Beaumaris. The principal rivers are the Brant and the Keveny. The ſoil is ſtony, rocky, and mountainous; but it produces corn and cattle, and there is plenty of fowl and fiſh. It was formerly covered with trees, which ſerved for a retreat to the Druids.

ANGLING, the art of fiſhing with a rod, line, hook, and bait.

The following rules are very neceſſary to be obſerved in angling. 1. To place yourſelf in ſuch a manner that your ſhadow do not at any time fall upon the water, eſpecially if it be ſhallow. 2. To angle in a pond near the ford where cattle go to drink, and in rivers, in ſuch places as the fiſh you angle for uſually frequent; as, for breams in the deepeſt water; for eels under banks; for chub in deep ſhaded holes; for perch and roach in ſcowrs; for trouts in quick ſtreams. The beſt times for angling are from April to October; for in cold ſtormy weather, or bleak eaſterly winds, the fiſh will not bite. The time of the day, in warm months, is in the morning, about nine o'clock, and in the afternoon between three and four. In order to attract fiſh to the place intended for angling, it will be proper once in four or five days to throw in ſome corn boiled ſoft, garbage, worms chopped to pieces, or grains ſteeped in blood and dried; and, if you fiſh in a ſtream, it will be beſt to throw in the grains above the hook. The beſt method of angling with a fly is down the ſtream; and, in order to make the fiſh bite freely, be ſure to uſe ſuch baits as you know they are naturally inclined to, and in ſuch a manner as they are accuſtomed to receive them. See the Articles Salmon, Trout, Carp, Tench, Perch, Pike, Dace, Gudgeons, Roach, Flounders, &c.

ANGLO-SAXON, a name given to the language ſpoken by the Engliſh Saxons, in order to diſtinguiſh it from the true Saxon, and alſo from the modern Engliſh.

* ANGOLA, a kingdom in Africa, to the ſouth of the line, lying along the weſtern ſea-coaſt, between five and ten degrees of latitude. It was firſt viſited by the Portugueſe, who have ſettled ſeveral colonies, and have converted great numbers of the negroes to Chriſtianity, but they adhere to moſt of their old cuſtoms, go almoſt naked, and take as many wives as they pleaſe. The country is divided into ſeveral territories, or capitanaries. The air is exceeding hot and unhealthy; but the ſoil is very fruitful in paſture, vegetables, grain, and fruits; poultry and cattle are exceeding cheap; and there are zebras, elephants, and other creatures common to thoſe parts of Africa. The Negroes are large, ſtrong, and coal-black, but lazy. They have different languages; and every village has what we call a king; but they are ſubject to one potentate, who is obliged to acknowledge the Portugueſe for his maſters.

ANGUINEAL *Hyperbola*, a kind of ſerpentizing hyperbola, cutting its aſymptote with contrary flexions.

Sir Iſaac Newton, in his Treatiſe of Curves, has given this name to the 33, 34, 35, and 36 ſpecies of the ſecond order, and which he has expreſſed by this equation, $xyy . ey = -ax^3 . bx^2 . cx . d$.

ANGULAR, relating to, or having angles.

ANGULAR *Motion*, in aſtronomy, is the increaſing or decreaſing angle, formed by two lines drawn from a central body to the apparent places of the two planets in motion.

ANHIMA, in natural hiſtory, a bird, common in Brazil, reſembling a crane in ſome particulars; but differing from that and all other birds by a ſlender horn of a bony ſubſtance, inſerted a little above the origin of its beak: It is larger than a ſwan, and mottled with black, grey, and white; in ſome parts are ſmall ſpots of yellow.

ANHINGA, in natural hiſtory, an extremely beautiful water fowl, found in the Brazils, about the ſize of our common duck. Its beak is about an inch and a half in length, and has a row of hooked prickles, both above and below; the upper part of the back is brown, ſpotted with yellow; and the breaſt, belly, and thighs, are of a ſilvery white.

ANIMADVERSION, a term ſometimes uſed to ſignify correction; ſometimes

times remarks, and ſometimes ſerious conſideration.

ANIMAL, in natural hiſtory, an organized body, endowed with life and ſpontaneous motion. Boerhaave defines an animal, reſpecting only the body, not the ſoul, to be an organical body, conſiſting of veſſels and juices; and taking in the matter of its nutriment by a part called a mouth; whence it is conveyed into the inteſtines, in which it has roots implanted, whereby it draws in its nouriſhment after the manner of plants. According to this definition, an animal is diſtinguiſhed from a foſſil, in that it has an organical body; and from a vegetable by this, that it has its roots within itſelf, and a plant without itſelf. In effect, the inteſtines of an animal are, in reality, no more than its earth, or the body it adheres to; into which it ſends forth its roots, that is, the lacteal veſſels, which thence draw the matter of its life and increaſe. The general characteriſtic then of an animal is, to be free and at large with reſpect to the ſubject it derives its nouriſhment from; for every thing is taken in at the mouth, and the mouth does not adhere to any thing: whereas all plants are connected in ſome manner or other to the body, which furniſhes them with food.

It therefore follows, that a fœtus, while it remains in the mother's womb, is a real plant, as being connected by the funiculus umbilicalis to the placenta, and by the placenta to the uterus, from whence it receives its nouriſhment. Some have defined animals from their local motion, as being capable of ſhifting from place to place, and plants from ſticking faſt to the ſame ſubject; but on this principle, oyſters, muſcles, cockles, &c. are excluded from the claſs of animals, inaſmuch as they adhere or grow to rocks &c. yet it is certain that thoſe creatures are real animals, as they have mouths and ſtomachs to take in their food; and lacteals, meſentery, and veins to receive it. All animals, according to the moſt probable and received opinion, are produced originally from eggs, in which they are contained, till the ſeed of the male penetrate their covering and ſtretch them, ſo as they become ready for hatching. When the animal breaks looſe from its ſhell in its perfect form, we ſay the dam of it is viviparous; when the young is excluded with hard covering round it, which we call the ſhell, we ſay the dam is oviparous. The ſhell of the egg in the vioparous kind is hard and convexed, the better to reſiſt the preſſure and the injuries of the air, to which it muſt lye expoſed for ſome time.

Animals that have feet, fins, or wings, and have the free power of tranſporting themſelves from one place to another, are divided into two ſexes under each ſpecies, that they may confer their joint offices in rearing their young. On the other hand, thoſe animals which are confined all their life to one ſpot are hermaphroditical, or have both ſexes conjoined in one body, and procreate their ſpecies without the concurrence of a mate. Of this ſort are limpets, ſea-ears, and ſeveral other kinds of ſhell-fiſh. Philoſophers comprehend man under the ſpecies of animals, and define him a reaſonable animal: though among naturaliſts, &c. animals are uſually reſtrained to irrationals.

Animals may be conſidered either as aerial, terreſtrial, aquatic, or amphibious. We call thoſe aerial which have wings, with which they can ſupport themſelves in the air. Terreſtrial are thoſe whoſe only place of reſt is upon earth. Aquatic are thoſe whoſe conſtant abode is upon the water. Thoſe are called amphibious which live freely in the air upon the earth, and yet are obſerved to live long on the water, as if they were natural inhabitants of that element.

Aerial animals may be ſubdivided into birds and flies. Fiſhes, which are the chief part of aquatic animals, may be divided into ſhell-fiſhes, ſcaly fiſhes, and thoſe that have neither apparent ſcales nor ſhells. And terreſtrial animals may be divided into quadrupedes, or beaſts; reptiles, which have many feet, and ſerpents which have no feet at all. Inſects, which in their ſeveral changes belong to ſeveral of the before-mentioned diviſions, may be conſidered together as one great tribe of animals. They are called inſects, from a ſeparation in the middle of their bodies, whereby they are as it were cut into two parts, which are joined together by a ſmall ligature, as we ſee in waſps, common flies, and the like.

Moſt animals have five ſenſes, viz. ſeeing, hearing, ſmelling, taſting, and feeling. Some reptiles of the earth, and ſome of the aquatics, want one or more of the ſenſes which are in perfect animals, as worms, oyſters, cockles, &c. Animals conſiſt of ſolids, or firm parts, as fleſh, bones, membranes, &c. and fluids, as blood, &c.

Animals make the ſubject of that branch of natural hiſtory called zoology.

The ſtructure of animals, with their diſorders, remedies, &c. make the ſubject of anatomy, medicine, &c.

As to the ſtructure of animals, it is obſerved that the make of every kind of animal is different from every other kind: and yet there is not the leaſt turn in the muſcles or twiſt in the fibres of any one, which does not render them more proper for that particular animal's way of life, than any other caſt or texture of them would have been.

ANIMAL, uſed adjectively, ſignifies ſomething belonging to, or partaking of, the nature of animals.

ANIMALCULE, a minute animal, ſcarce, or not at all, viſible to the naked eye.

Animalcules, though ſo very minute as to be only ſeen by the aſſiſtance of the microſcope, are vaſtly more numerous than any other part of the animal creation. They have been diſcovered in moſt liquors, in ſeveral of the chalybeat as well as in common water: in oats, barley, wheat, peas, &c. and in the puſtules of the itch.

ANIMATED, ſomething inſpired with life, or that exhibits marks of being inſpired by ſome ſpirit or ſoul.

ANIMATED *Power*, in mechanics, implies a man, or other animal, in contradiſtinction to ſprings, water, wind, &c.

ANIMATED *Needle*, a needle touched with a loadſtone, or magnet. See MAGNET.

ANIME, or *Gum* ANIME, in natural hiſtory, a kind of gum, or rather reſin, of a friable ſubſtance, inflammable, and ſoluble in oil. There are two kinds of this gum-reſin, diſtinguiſhed by the names of oriental and occidental.

The oriental or Ethiopian anime, called by the Portugueſe animum and animium, and in the ſhops gum anime, is a dry and ſolid reſin, brought to us in large cakes or maſſes, of an irregular figure, and of a very uncertain colour; ſome of them are greeniſh, ſome reddiſh, ſome brown, and ſome of the colour of myrrh; they all agree in this, however, that they are moderately pellucid, of a tolerable compact texture, light and eaſily powdered, of a fragrant ſmell, very inflammable, and of a reſinous and ſomewhat bitter taſte. This, which is the genuine and true anime, is now very rare in the ſhops. It is brought, as Garcias informs us, only from Ethiopia; but the occidental kind, or reſin of the courbaril, is what is univerſally received in its place. We are not yet informed what the tree is that produces the Ethiopian anime. Herman is of opinion, that it is the ſame that yields the occidental kind, only growing in a different climate; but this is no more than a conjecture.

The occidental anime is a whitiſh, dry, and ſolid reſin, ſomewhat reſembling frankincenſe in colour. It is often of a fine yellowiſh white, between that of frankincenſe and maſtich, and in the pureſt pieces is very clean and tranſparent; in general, however, it is much inferior to the oriental in theſe reſpects. It is moderately heavy, friable, and ſomewhat oleaginous to the touch. It is extremely fragrant, eſpecially when burnt, and is of a reſinous, acrid, and ſomewhat bitteriſh taſte. It is brought to us from many parts of America, particularly from New Spain and the Braſils. The natives call it joticacica and jetaicica. Our people, from their name of the tree, vulgarly call it reſin of courbaril. The tree which produces it is one of the arbores ſiliquoſæ of Mr. Ray, and grows to a great height. It is common in moſt parts of America; and the fruit ripens in May and June, when it falls from the trees, and is picked up by the natives, who are fond of the farinaceous ſubſtance that is among the fibres within. The trunk of the tree exſudates the reſin here deſcribed in very conſiderable quantities, without being wounded for it; the fineſt lumps of it are white, or of a pale yellow, and much reſemble amber.

ANINGA, a root growing in the Antilles iſlands, nearly reſembling the china root. It is uſed in the ſugar works for refining the ſugar.

ANISE, *Aniſum*, in botany, a ſmall nanual umbelliferous herb, producing roundiſh ſtriated ſeeds, flatted on one ſide, and pointed at one end; of a pale colour inclining to green. The upper leaves are divided into five ſegments; but the lower are entire, roundiſh, and ſerrated about the edges. This plant, which is ſaid to be a native of Egypt and Syria, is cultivated in the ſouthern parts of Europe; and is raiſed in ſome of our gardens, but ſeldom brings its ſeed to perfection. The ſeed brought from Spain are reckoned the beſt. Anniſeeds have an aromatic ſmell, and a pleaſant warm taſte, accompanied with a ſmall degree of ſweetneſs. They are in common uſe as a warm carminative, and ſuppoſed to be the moſt effectual of all the warm ſeeds. They give out all their virtue to rectified ſpirits, which become of a bright lemon colour, and taſte very agreeably. In diſtillation they give over the whole of their flavour. An eſſential oil ariſes with the water, in a conſiderable quantity, above an ounce having been extracted from three pounds of the ſeed. It is recommended chiefly in diſorders of the breaſt; but is ſaid to be leſs effectual in flatulencies, than the ſeeds in ſubſtance.

ANISE *Stellatum*, ſtellated aniſe, is the fruit or ſeed veſſel of a ſmall tree growing in Tartary, China, and the Phillipine iſlands. The huſks have a fragrant ſmell, and a ſweetiſh warm aromatic taſte, like the common anniſeeds, but ſtronger and more agreeable. They have alſo the ſame virtues.

ANKER, a liquid meaſure at Amſterdam, containing about thirty-two gallons Engliſh.

ANNALS, a ſpecies of hiſtory, wherein events are related in the chronological order they happened.

It differs from a perfect hiſtory, in being only a meer relation of what paſſes every year, as a journal is of what paſſes every day; whereas hiſtory relates not only the tranſactions themſelves, but alſo the cauſes, motives, and ſprings of ſuch actions. Cicero informs us that the pontifex maximus, in order to preſerve the memory of events, wrote what paſſed each year on tablets, which were expoſed to public inſpection in his own houſe. Theſe tablets were called *annales maximi*; hence the writers who imitated this method of writing were ſtiled annaliſts.

ANNATES, among eccleſiaſtical writers, implies the firſt year's revenue of a ſpiritual living. Theſe annates were formerly given to the pope; but at the Reformation they were veſted in the king. Queen Anne, however, reſtored them to the church, by appropriating them to the augmentation of ſmall livings.

ANNE, or *St.* ANNE'*s Day*, a feſtival obſerved in the Greek and Latin churches, in honour of Anne or Anna, mother of the Virgin Mary.

* ANNE, queen of Great Britain, the youngeſt daughter of king James II. and Anne Hyde, his firſt wife, was born on the 6th of February, 1665, and married to prince George of Denmark on the 17th of Auguſt, 1683, by whom ſhe had ſeveral children, who died young. Her perſon was of the middle ſize, majeſtic, and well proportioned; her face round and handſome; her complexion ruddy, her features regular, and her hair of a dark brown. She was poſſeſſed of moſt of the virtues that in private life adorn her ſex, and ſucceeded her brother-in-law, William III. on the 4th of May, 1702, and during her reign the honour of the Britiſh arms was carried to an amazing height, particularly by the duke of Marlborough, who, in her reign, humbled the pride of France, by a number of the moſt glorious victories. The nation being at the ſame time at war with Spain, the duke of Ormond and Sir George Rook took Vigo, when eleven French men of war were burnt and ten taken; ſix galleons were ſunk, and eleven taken. On the 24th of July, 1704, Sir George Rook took Gibraltar, after a ſiege of two days. The next year the earl of Peterborough took the city of Barcelona, and ſeveral other places in Spain; and in 1706 the earl of Galway, at the head of twenty thouſand men, took Alcantara, a city of Portugal. In 1708 major-general Stanhope landed with three thouſand men on the iſland of Minorca, and attacked Fort St. Phillip, where the garriſon, which conſiſted of a thouſand Spaniards, and ſix hundred French, ſurrendered in three days; the men were made priſoners of war, and the whole iſland conquered in three weeks.

Theſe wars were concluded by the treaty of Utrecht in 1713, by which Spain and Spaniſh America were confirmed to king Philip; but the Netherlands and the Spaniſh dominions in Italy were ſeparated from that monarchy. Their Italian dominions conſiſted of the kingdoms of Naples, Sicily, Sardinia, and the duchy of Milan, of which Naples, Sardinia, and Milan were beſtowed upon the emperor; and Sicily, with the title of king, given to the duke of Savoy. The Dutch had a barrier given them againſt France in the Netherlands; while Harley and Bolingbroke, the new miniſtry, in complaiſance to France, only inſiſted on having Dunkirk demoliſhed, and the poſſeſſion of Gibraltar, Minorca, and Acadia, or Nova-Scotia, ſecured to the crown of England, though much better terms had been before offered by the French. Queen Anne procured a law for the building of fifty new churches within the bills of mortality, with an augmentation of the livings of the poor clergy; and in 1706 the union of the two kingdoms of England and Scotland took place. The queen died at Kenſington on the firſt of Auguſt, 1714, in the 50th year of her age, and the thirteenth of her reign. She was ſucceeded by George I.

* ANNE Boleyn, Queen of Henry VIII, was executed on Tower-hill, May 19, 1536. Henry began to be cloyed with the poſſeſſion of Anne Boleyn, who had lately been delivered of a dead male child; to the unſpeakable diſappointment

of her huſband, who was ſuperſtitious enough to believe this accident was a judgment from heaven. He was about this time captivated with the beauty of Jane Seymour, one of the queen's ladies; and his paſſions were ſo ſtrong and impetuous, that he ſacrificed every thing to their gratification. Theſe concurring motives for his alienation from the queen, were ſtrengthened by his wife's deportment, which was too frank and unguarded, to ſcreen her from the imputation of levity and indiſcretion. Her enemies, in particular the duke of Norfolk, and all thoſe who had adhered to the old religion, took advantage of this diſpoſition, to inflame the king's jealouſy; the principal fomenter of which was the lady Rochford, ſiſter-in-law to queen Anne, a woman of an infamous character, who hated her miſtreſs with the moſt envenomed rancour. She hinted to the king, that his wife carried on a criminal correſpondence with her own brother the lord Rochford: and Henry's mind being prepared for this poiſon, by his diſguſt for Anne, and his new paſſion for Jane Seymour it operated with great violence. The inſinuations of the lady Rochford were confirmed by the duke of Norfolk, who enjoyed a great ſhare of the king's confidence, and was devoted to the popiſh religion, which could not flouriſh while queen Anne lived to countenance the reformation. The partiſans of the pope therefore conſpired her ruin. She was not only accuſed of inceſt with her brother the lord Rochford, but likewiſe of living in carnal commerce with Henry Norris, groom of the ſtole, Weſton, and Brereton, of the king's privy chamber, and Mark Smeton a muſician. There was no other evidence than an hearſay declaration of one lady Wingfield, who confeſſed ſome particulars on her death-bed: but, this was ſufficient to ruffle ſuch a mind as that of Henry, who, is ſaid to have obſerved Anne, at a tournament in Greenwich, drop her handkerchief to one of her minions, that he might wipe his face, after having over-heated himſelf in the exerciſe. Be that as it may, the king returned abruptly to Whitehall; Anne was confined to her chamber; and the ſuſpected delinquents being apprehended at the ſame time, were committed to the tower. Anne ſmiled at firſt, thinking the king was in jeſt; but when ſhe found it was a very ſerious affair, ſhe received the ſacrament in her cloſet, and prepared for death. This reverſe of fortune affected her in ſuch a manner, that ſhe was ſeized with hyſteric fits, during which ſhe laughed and wept by turns; and uttered many inconſiſtencies, according to the nature of that diſeaſe. Next day ſhe was conveyed to the tower, where ſhe fell upon her knees, and appealed to God for the knowledge of her innocency. She in vain, begged to be admitted into the preſence of the king. The lady Boleyn, her uncle's wife, who had always hated her, was ordered to be in the ſame chamber with her; and ſhe made a report of all the incoherent ravings of the afflicted priſoner. She was viſited by the duke of Norfolk, and ſome of the king's council, who endeavoured to draw her into a confeſſion, by ſaying ſhe was accuſed by Norris and Smeton: but, ſhe ſtill perſiſted in denying the charge; and told the lieutenant of the tower, ſhe was not more guilty with any man upon earth, than with himſelf. She confeſſed indeed, that ſhe had, in the gaiety of her heart, made uſe of ſome indiſcreet expreſſions to Smeton and Weſton; and the familiarity of her behaviour had encouraged them to hint a paſſion for her, which, in all probability, afforded her matter of laughter and amuſement; and perhaps the knowledge of thoſe frivolous circumſtances increaſed the king's jealouſy and indignation. Every perſon at court abandoned the unhappy queen in her diſtreſſes, except Cranmer, who, though forbid to come into the king's preſence, wrote a letter to him in behalf of Anne Boleyn. But his interceſſion had no effect. On the twelfth day of May, Norris, Weſton, Brereton, and Smeton, were tried in Weſtminſter-Hall; when Smeton confeſſed he had known the queen carnally three times; but he was ſuppoſed to have been inveigled into this confeſſion with a premiſe of pardon. The other three pleaded not guilty; but, all four were convicted and condemned to die the death of traitors. On the fifteenth day of the month, the queen, and her brother lord Rochford, were brought to their trial, before the duke of Norfolk, as lord high ſteward for the occaſion, the duke of Suffolk, the marquis of Exeter, the earl of Arundel, and five and twenty other peers. The queen appearing at the bar, was charged with criminal converſation with her brother, and the other four; as alſo with having conſpired the king's death. She pleaded not guilty, and anſwered diſtinctly all the evidence that was provided againſt her. As ſhe was not confronted by Smeton, in all probability he had borne falſe witneſs; for, all the others denied the charge. Nevertheleſs ſhe was convicted and condemned to be burned or beheaded at the king's pleaſure. Her brother likewiſe was found guilty, and ſentenced to be beheaded and quartered. The king, not ſatisfied with this vengeance was deſirous of ſeeing her daughter Elizabeth declared illegitimate. He remembered a report of a previous contract, between lord Piercy, afterwards earl of Northumberland, and Anne Boleyn. The earl being queſtioned on this ſubject, declared, that no ſuch contract had ever ſubſiſted. He ſwore to this declaration on the ſacrament, which he wiſhed might be his damnation if he did not ſpeak the truth. Nevertheleſs, Anne was tampered with in ſuch a manner, either by promiſe of life, or threats of executing the ſentence in all its rigour, that ſhe confeſſed ſuch a precontract, at Lambeth, before the afflicted archbiſhop of Canterbury, and ſome other perſons of diſtinction; and her marriage with the king was declared null and inſufficient. This ſentence, however, palpably contradicted the other which had been pronounced againſt her; for, if her marriage with Henry was null from the beginning, ſhe could not be juſtly attainted for adultery. In two days after this declaration, ſhe was ordered to be executed in the green on Tower-Hill; and behaved with great piety, reſignation, and good humour. She is ſaid to have written a letter to the king, when ſhe firſt underſtood the cauſe of her confinement. Such an addreſs was afterwards found among the papers of Cromwell, drawn up with ſuch pathetic eloquence and dignity of expreſſion, as to do great honour to the author; but it is generally ſuſpected to have been written by another hand. On the day that preceded the execution, ſhe deſired the wife of the lieutenant of the tower to ſit down in the chair of ſtate; then kneeling before her, and ſhedding a flood of tears, ſhe conjured her to go, in her name, and aſk pardon of the princeſs Mary, for the harſhneſs with which ſhe had been treated. On the morning of her execution ſhe ſent for the lieutenant, that he might be preſent at her receiving the ſacrament, and declaring her own innocence. She ſaid, ſhe was ſorry to hear her execution was delayed till the afternoon, becauſe before that time ſhe had expected to be out of her pain. Then ſhe inquired about the dexterity of the executioner; fixed her hands about her neck, obſerving that ſhe had a very little neck, and laughing heartily. When ſhe was brought to the ſcaffold, in preſence of the dukes of Suffolk and Richmond, the lord chancellor, the ſecretary Cromwell, with the lord-mayor, aldermen, and ſheriffs of London, ſhe ſaid ſhe was come to die, as ſhe had been judged by the law. She prayed God would preſerve the king, who had been always to her a moſt merciful, good, and gentle ſovereign, and deſired, that people would judge of him with charity. She took leave of all the ſpectators deſiring they would pray for her; and after ſhe had ſpent ſome time in devotion, her head was ſevered from her body by the executioner of Calais, who was brought over for his dexterity in performing that operation. Her body was thrown into a common cheſt, and buried in the tower-chapel without any ceremony. Her brother, with the other convicts, were beheaded, except Smeton, who was hanged. Norris was promiſed to be forgiven, if he would confeſs his guilt, and accuſe the queen; but he rejected the propoſal with diſdain, ſaying, in his conſcience, he thought her free of the crimes laid to her charge; and would rather die a thouſand deaths, than ruin an innocent perſon. Thus fell Anne Boleyn whoſe fate has been the ſubject of much controverſy. She ſeems to have been a lady of unaffected piety, and a very charitable diſpoſition, though ſhe had by her education in France, contracted a kind of vivacity which did not ſuit the manners of an Engliſh court. She was naturally volatile and in ſome caſes childiſhly indiſcreet: ſo that in all probability, her heart was better than her underſtanding. She encouraged learning and genius, diſtributed great ſums in alms; and died a ſacrifice to the jealouſy and intemperance of Henry, inflamed by the malicious ſuggeſtions of thoſe who were enemies to the reformation, which ſhe in a particular manner patronized. Nothing juſtified Anne Boleyn ſo much as the conduct of the king, who on the very day that ſucceeded her execution, married Jane Seymour, ſo little regard did he pay to common decorum, and the opinion of his ſubjects; over whom he had by this time acquired the moſt deſpotic authority.

ANNEXATION, in law, implies the uniting lands, or rents to the crown.

ANNI *Nubiles*, in law, ſignifies the marriageable age of a woman, viz. after ſhe has reached her twelfth year.

ANNIHILATION, the act of reducing any created being to nothing.

ANNIVERSARY, the annual return of any remarkable day. Formerly anniverſary days particularly denoted thoſe days on which an office was performed for the ſouls of the deceaſed, or the martyrdom of the ſaints was celebrated in the church.

ANNO DOMINI, the year of our Lord, the computation of time from our Saviour's incarnation. See EPOCHA.

ANNOTATION, in literature, a brief commentary, or remark on a book or writing, in order to clear up ſome paſſage, or draw ſome concluſion from it.

ANNOTTO, in dying, a beautiful red colour, formed from the pellicles of the ſeeds of a tree common in South-America. It is alſo called orlean, and roucou. The annotto, commonly met with among us, conſiſt of balls moderately hard and dry, of a brown colour on the outſide and a dull red within. It is uſed as an ingredient in varniſhes, for giving more or leſs of an orange caſt to the ſimple yellows. Alkaline ſalts render it perfectly ſoluble in boiling water, without altering its colour. Wool or ſilk boiled in the ſolution, acquire a deep, but not a very durable, orange dye. When imbibed in cloth, it is diſcharged by ſoap, and deſtroyed by expoſure to the air. Labat informs us, that the Indians prepare an annotto much ſuperior to that which is brought to us, of a bright ſhining red colour, almoſt equal to carmine: De Laet, in his notes on Marcgrave's Natural Hiſtory of Brazil, mentions alſo two kinds of annotto; one of a permanent crimſon colour, uſed as a fucus, or paint for the face; and another, which gives a colour inclining more to that of ſaffron. This laſt, which is our annotto, he ſuppoſes to be a mixture of the firſt ſort with certain reſinous matters, and with the juice of the root of the tree. *Lewis's Notes upon Neumann's Chemiſtry.*

ANNUAL, an epithet applied to any thing that returns every year, or that is performed in that ſpace of time.

ANNUITY, a yearly or annual rent or revenue, paid either for a term of life, or of years, or in fee, and for ever. In common law, the difference between a rent and an annuity, conſiſts in this, that rent is payable out of land; whereas an annuity charges only the perſon of the grantor, and that for the recovery of a rent, an action lies: whereas for that of an annuity, there only lies a writ of annuity againſt the grantor, his heirs, and ſucceſſors. Add to this that annuities are never taken for aſſets, as being no freeholds in law. ſee INTEREST *Simple* and *Compound*.

ANNULAR, in a general ſenſe, implies ſomething in the form of a ring.

ANNULAR, in anatomy, an epithet applied to ſeveral parts of the human body: thus the ſecond cartilage of the larynx is called the annular cartilage; the ligament that encompaſſes the wriſt, and ties the bones together, is termed the annular ligament; and a protuberance of the medulla oblongata is ſtiled the annular proceſs.

ANNULAR is alſo a peculiar name for the fourth finger.

ANNULET, in architecture, a ſmall ſqare member in the Doric capital, under the quarter round. See CAPITAL.

ANNULET, is alſo uſed to imply a narrow flat moulding, common to various parts of the columns, particularly their baſes, capitals, &c. Vitruvius calls it a fillet; Palladio, a liſtel or cincture; Scammozzi, a ſupercillium, liſt, tinea, eye-brow, ſquare, and rabbit.

ANNULLING, a term ſometimes uſed for cancelling, or rendering a deed, ſentence, &c. void, and of no effect.

ANNUNCIADES, ſeveral religious orders inſtituted in honour of the annunciation.

ANNUNCIATION, a feſtival celebrated by the church on the twenty-fifth of March, in memory of the annunciation, or tidings, brought by the angel Gabriel to the Virgin Mary, of the incarnation of Chriſt.

The feaſt of this annunciation appears to be of very great antiquity. It was obſerved before the time of the council of Trullo, in which there is a cannon forbidding the celebration of all feſtivals in Lent, excepting the Lord's day, and the feaſt of the annunciation: ſo that we may date its original from the ſeventh century.

ANODYNE, among phyſicians, ſignifies a medicine that mitigates or removes pain. See PAREGORICS, OPIATES, and NARCOTICS.

ANOMALOUS, in a general ſenſe, is applied to whatever is unequal, irregular, or that deviates from the rule obſerved by ſimilar things in ſimilar caſes.

ANOMALOUS *Pulſe*, among phyſicians, a pulſe whoſe ſtrokes are unequal with regard to ſtrength.

ANOMALUS *Verbs*, in grammer, ſuch as are irregularly conjugated, or formed in a manner different from the general rules.

ANOMALY, in grammar, an irregularity or a deviation from the common rules.

ANOMALY, in aſtronomy, the diſtance of a planet from the aphelion or apogee; or an irregularity in the motion of a planet, whereby it deviates from the aphelion or apogee. Kepler diſtinguiſhes three kinds of theſe anomalies; mean, eccentric, and coequate, or true. Mean Anomaly, in the old aſtronomy, is the diſtance of a planet's mean place from the apogee. In the modern aſtronomy, it is the time wherein the planet moves from its aphelion, to the mean place or point of its orbit.

ANOMALY *of the Excentric*, or *of the Center*, in ancient aſtronomy, an arch of the zodiac, terminated by the line of the apſides, and the line of the mean motion of the center.

ANOMOEANS, in eccleſiaſtical hiſtory, the name by which the pure Arians were diſtinguiſhed in the fourth century, in contradiſtinction to the Semi-Arians. The word is formed from the Greek, ανομοιος, different, diſſimilar: for the pure Arians aſſerted, that the Son was of a nature different from, and in nothing like, that of the Father: whereas the Semi-Arians acknowledged a likeneſs of nature in the Son; and at the ſame time that they denied, with the pure Arians, the conſubſtantiality of the word.

The Semi-Arians condemned the Anomœans in the council of Seleucia, and the Anomœans in their turn condemned the Semi-Arians in the councils of Conſtantinople and Antioch, eraſing the word ομοιος, like, out of the Formula of Rimini, and that of Conſtantinople.

ANONA, in botany, the name of a genus of plants, whoſe perianthium is compoſed of three cordated, hollowed, and ſharp-pointed leaves; the ſtamina are ſcarce viſible; but the antheræ numerous: the fruit is a large berry, of an oval figure, covered with a ſquamoſe punctuated bark: the ſeeds are numerous, hard, of an oblong figure, and placed circularly.

ANONIS, *Reſt Harrow*, in botany, the name of a plant, which is accounted deterſive, good to open obſtructions of the liver, and to cure the jaundice. Some affirm it is a diuretic, and proper in ſuppreſſion of the urine; but it is at preſent rarely uſed.

ANONYMOUS, ſomething without a name. It is generally applied to ſuch books as are publiſhed without the name of the author; and to ſuch authors whoſe names are unknown.

ANOREXY, among phyſicians, implies a want of appetite, or a loathing of food.

It is either an eſſential diſeaſe, proceeding from a fault in the ſtomach, or derived from other diſorders. When it is an original diſeaſe, it generally proceeds from a voraciouſneſs, and a hard diet; whence crude and indigeſted humours will ariſe and prevent digeſtion; which is often known from a ſenſe of weight in the ſtomach, or from copious wind and eructations of various kinds, chiefly the nidorous and acid; or from a nauſea and reaching to vomit. In old perſons, when the whole body is feeble, it may proceed from want of ſpirits, or the fluids being defective, or from a debility of the contractive force and motions of the ſtomach, whence an univerſal decay proceeds. This diſorder is often a ſymptom of other diſeaſes, particularly the acute, as inflammations, aſthma, dropſy, hypochondriac paſſion, melancholy, the gout, vomiting, or dyſentery: or when the humours are ſo corrupt, and the ſpirits oppreſſed in malignant diſeaſes, that the faculty of digeſtion is depraved, or nature may be ſo buſied in expelling another diſeaſe, as to neglect this. In the laſt caſe it cannot be cured till the diſeaſe itſelf is vanquiſhed. In the ſpontaneous anorexy, when the ſtomach is loaded with crudities which cauſe reaching to a vomit, a ſingle emetic will often perform a cure, joined to a ſtomachic remedy: but if there is no reaching, the humours are to be incided and digeſted with bitter ſalts, ſuch as the ſalts of bitter herbs, tartar vitriolated, arcanum duplicatum, or the like, given in powder from a ſcruple to half a dram, ſeveral times in a day; or terra foliata tartari, diſſolved, to ſixty drops or more. After this the cathartic, compoſed of bitter ingredients, or Epſom ſalt may be given. When the ſtomach and inteſtines are purged, bitter elixirs and tinctures ſhould be uſed, combined with aromatics, from fifty to ſixty drops, or upwards, to reſtore the tone of the ſtomach. Candied ginger, orange-peel, or elixir vitrioli, eſpecially when the peccant humour is alkalous or bilious, may be properly added to the infuſions of bitter roots and herbs, with aromatics in wine, eſpecially wormwood wine, and the like ſtomachic liquors. When the crudities of the ſtomach are acid, abſorbents are proper, ſuch as crabs eyes, mother of pearl and coral, and then a ſuitable purge of aloetic pills or rhubarb, or a bitter cathartic ſalt. Magneſia alba is likewiſe uſeful on this account, being abſorbent and uſeful in the hypochondriac paſſion. This ſhould be taken for ſome days, from fifteen to twenty grains; if the doſe be enlarged to a dram or two, it will purge pretty briſkly. The crudities being evacuated, bitters and aromatics are proper, as well as chalybeates and tinctures of ſteel; ſpa waters, and other mineral waters

ters of the ſame kind, together with exerciſe, and now and then a draught of generous wine will be found very advantageous. Smoaking tobacco frequently is hurtful, as well as drinking of drams; the diet ſhould be regular, and the patient muſt avoid aliments that are hard of digeſtion, fat, or flatulent, and alſo intenſe ſtudies.

ANT, *Formica*, in natural hiſtory, the name of an inſect, celebrated both for its induſtry and œconomy. The ſight of ants is really very inſtructive. They are a little people, united like the bees, in a republic governed by its own laws and politics. They have a kind of oblong city, divided into various ſtreets, that terminate at different magazines. Some of the ants conſolidate the earth, and prevent its falling in, by a ſurface of glue, with which they incruſt it. Thoſe which we commonly ſee, amaſs ſeveral ſplinters of wood, which they draw over the tops of the ſtreets, and uſe them as rafters to ſuſtain the roof; and acroſs theſe they lay another rank of ſplinters, and cover them with a heap of dry ruſhes, graſs, and ſtraw, which they raiſe with a double ſlope, to turn the current of the water from the magazines; ſome of which are appropriated to receive their proviſions, and in the others they depoſit their eggs, and the worms that proceed from them. As to their proviſions, they take up with every thing eatable, and are indefatigable in bringing home their ſupplies. You may ſee one loaded with the kernel of ſome fruit, another bends under the weight of a dead gnat. Sometimes ſeveral of them are at work on the carcaſe of a May-fly, or ſome other inſect. What cannot be removed, they eat on the ſpot, and carry home all that is capable of being preſerved. The whole ſociety is not permitted to make excurſions at random: ſome are detached, as ſcouts, to get intelligence; and, according to the tidings they bring, all the community are upon the march, either to attack a ripe pear, a cake of ſugar, or a jar of ſweet-meats; and, in order to come to this jar, they leave the garden, and aſcend the houſe; there they find this mine of ſugar, this rich Peru of ſweets, that opens all its treaſures to their view. But their march to it, as well as their return from it, is under ſome regulation: the whole band is ordered to aſſemble and move in the ſame tract; but the injunction is not executed with much ſeverity, and they have liberty to expatiate when they have an opportunity of ſpringing any game in the country. The green vermin that make an infinite waſte among flowers, and cockle the leaves of the peach and pear-trees, are ſurrounded with a glue, or kind of honey, which is ſought for by the ants with great avidity; but they are not ſollicitious either for the fleſh of theſe creatures, or for any part of the plant. Theſe are the vermin who are the authors of all that deſtruction to our trees, which is falſely imputed to the ants, and draws upon them a very unjuſt and cruel perſecution.

The ants having paſſed the ſummer in a conſtant employment and fatigue, ſhut themſelves up in the winter, and enjoy the fruits of their labour in peace; however, it is very probable, they eat but little in that ſeaſon, and are either benumbed, or buried in ſleep, like a multitude of other inſects; and therefore their induſtry in ſtoring up proviſions, is not ſo much intended to guard againſt the winter, as to provide during the harveſt, a neceſſary ſuſtenance for their young. They nouriſh them, as ſoon as they leave the egg, with an aſſiduity that employs the whole nation; and the care of their little progeny, is eſteemed a matter of importance to all the ſtate. When the young quit the egg, they are little worms, no longer than common grains of ſand, and after they have for ſome time received their aliment, which is brought to them in common, and diſtributed in equal proportions, they ſpin a thread, and wrap themſelves up in a white web, and ſometimes in one that is yellow: at which period they ceaſe to eat, and become aurelias. In this ſtate ſome pleople fancy they are the eggs of ants, when in reality they are the nymphs, out of whoſe ruins the new piſmires are to riſe. Though the young diſcontinue their eating, their nurture ſtill proves very fatiguing to their parents. Theſe have generally ſeveral apartments, and remove their young from the nurſery to ſome other manſion they intend to people. They either raiſe the aurelias towards the ſurface of the earth, or ſink them to a diſtance from it, in proportion as the ſeaſon is either warm or cold, rainy, or dry. They raiſe them when the weather proves ſerene, or when a long drought is ſucceeded by gentle dews; but, at the approach of night and cold, or the appearance of ſhowers, they claſp their beloved charge in their arms, and deſcend with them to ſuch a depth, that one muſt then dig above a foot into the earth before thoſe aurelias can be diſcovered.

ANT-EATER, in natural hiſtory, the name of an American quadruped that lives upon ants. This creature is as long and as tall as a middle-ſized dog. When he has found a neſt of ants, he opens the upper part of it with his claws, that he may have room to put in his ſnout, and long ſlender tongue. This is beſmeared with a ſlimy liquor, and is ſoon covered with ants, when he draws it into his mouth and ſwallows them. He repeats this practice, as long as they will run into the ſame ſnare.

ANT-HILLS, in huſbandry, little hillo s of earth which the ants throw up for their habitation for the breeding their young. They are a very great miſchief to dry paſtures, not only by waſting ſo much land as they cover, but by hindering the ſcythe in mowing the graſs, and yielding a poor hungry food pernicious to cattle.

Human dung deſtroys them moſt effectually, as is proved by experiment; for it will kill great numbers of them, and drive all the reſt away, if only a ſmall quantity of it be put into their hills.

ANTA, in natural hiſtory, the name of an animal common in Brazil, and called tapierete. It is as large as a calf, but reſembles a hog in ſhape, eſpecially the head, which terminates in a point in the upper part. It has a proboſcis over the mouth, which it can contract or extend at pleaſure. It has no tail; and the ſkin is hard: and, while the animal is young, it is covered with ſhort hair of a darkiſh colour, variegated with white ſpots; but when it has done growing, the colour is yellow, and without ſpots. It feeds chiefly in the night, on graſs, ſugar-canes, cabbages, and the like. The fleſh has a taſte like beef, but not very agreeable. The Indians make a ſoſt of helmet of their ſkins, which cannot be penetrated without an arrow.

ANTAGONIST *Muſcles*, in anatomy, thoſe muſcles which have oppoſite functions, as flexors and extenſors, abductors, and adductors, &c.

ANTARCTIC, ſomething oppoſite to the Bear, a conſtellation near the north pole.

ANTARCTIC *Circle*, in geography and aſtronomy, a ſmall circle of the ſphere, 23°. 33'. diſtant from the ſouth pole.

ANTARCTIC *Pole*, the ſame with ſouth pole. See SPHERE.

ANTARES, in aſtronomy, the name of a ſtar of the firſt magnitude, called alſo the ſcorpion's heart. Its longitude is 6°. 13'. 14''. off Sagittarius; and its latitude 4°. 31'.'26''. S.

ANTECEDENT, in a general ſenſe, ſomething that goes before another, either with regard to time or place.

ANTECEDENT, in grammar, the word to which the relative refers. Thus in the ſentence, "The book that we read." the word book is the antecedent.

ANTECEDENT, in mathematics, the firſt of two terms in a ratio, being that which is compared to the other. Thus in the ratio of x to y, x is the antecedent. See RATIO.

ANTECEDENT *Signs*, among phyſicians, ſuch ſigns as are obſerved before a diſtemper is formed ſufficiently to be reduced to any particular claſs. Thus a bad diſpoſition of the blood is an antecedent ſign, becauſe it precedes an infinite number of diſeaſes.

ANTECEDENCE, *Antecedentia*, in aſtronomy, an apparent motion towards the weſt, or contrary to the order of the ſigns.

ANTECHAMBER in architecture, the chamber that leads to the chief apartment.

ANTEDATE, in law, a ſpurious or falſe date, prior to the true date of any writing.

ANTEDILUVIAN, in a general ſenſe, implies ſomething that exiſted before the deluge.

It does not appear that either Adam or his deſcendants before the flood, had much knowledge of what is now called philoſophy, either natural, or moral, eſpecially the former. We find honeſt laborious men before the flood, who applied themſelves to agriculture, preſerved their primitive traditions, tended their flocks, and retained a true knowledge of God; but were no philoſophers: wherefore it is in vain to ſeek the origin and riſe of philoſophy in the time preceding the flood.

ANTEDILUVIAN *Philoſophy*, the philoſophy of the patriarchs before the deluge.

ANTEDILUVIAN *World*, the earth as it exiſted before the deluge.

* ANTEGO, or ANTIGUA, one of the Caribbee iſlands inhabited by the Engliſh, about ſixty miles in circumference, containing five pariſhes, four of which are towns, viz. St. John's Town, the capital, Falmouth, Parham, and Bridge-Town. The name of the remaining pariſh is St. Peter's. In 1707, it was ſaid to contain eight thouſand whites and twenty-four thouſand blacks. The inhabitants make about ſixteen thouſand hogſheads of ſugar every year, but not half

ſo much rum, and plant but very little tobacco. Their chief inconvenience is the want of water, which obliges them to ſave as much rain-water as they can, and to fetch freſh water from the other iſlands. There are ſeveral good harbours, but dangerous to ſail into without a pilot, on account of the rocks. There were ſome Engliſh families ſettled here ſo early as 1536; but they did not make any figure till 1680. In 1736, the Negroes deſigned to riſe and make themſelves maſters of it, which would have been effected, if the plot had not been timely diſcovered. Many of the ring-leaders were puniſhed with death in different manners. The weather is hotter here than at Barbadoes, and the ſoil is ſandy; however they have the ſame animals as in the other iſlands, with very great plenty of fowl and black cattle; and wild cinnamon grows in the lower parts of the iſland. Long. 62. 5. W. Lat. 17. 30. N.

ANTELOPE, in natural hiſtory, an animal called, by Latin authors, *gazella Africana*, and thought by ſome to be the ſame as the Lybian goat. The antelope is very ſwift; has a white belly, and the reſt of the body of a fallow colour; the white and the fallow on the ſides are parted by a black ſtripe; the eyes are black, the ears large, the tail blackiſh, and a ſtripe a little more brown, than the reſt of the hair deſcending from the eye down to the muzzle. He is about the ſize of a roe-buck, and his hair very ſhort. Under the hair the ſkin is black and ſhining, though in ſome it is greyiſh, The ears are large and bald within, where the ſkin is black, like poliſhed ebony. The eyes are black and large; and the horns are likewiſe black, ſtriped croſs-ways. They are about fifteen inches long, and near an inch diameter at the bottom. They are ſharp at the points, and pretty ſtraight, though they turn a little outwards in ſome places, and in others inwards. The horns of the male are bent a little more back than thoſe of the female, which are very round; but thoſe of the male are a little flattiſh.

ANTEPENULTIMA, in grammar, the third ſyllable of a word from the end, or the laſt ſyllable but two.

ANTHEM, a church ſong, conſiſting of ſome paſſages of ſcripture ſet to ſolemn muſic.

ANTHERÆ, in botany, the ſmall roundiſh or oblong bodies on the tops of the ſtamina of plants. See STAMINA.

ANTHOLOGY, a diſcourſe on flowers; or a collection of beautiful paſſages from famous authors.

St. ANTHONY's *Fire*, a name ſometimes given to the eryſipelas. See ERYSIPELAS.

ANTHORA, yellow helmet flower, counterpoiſon monks-hood, or wholeſome wolfſbane, in botany, the name of a plant. It is diſtinguiſhed from the other aconites or wolfſbanes by the leaves not being gloſſy, by their being cut quite down to the pedicle, and by the ſegments being very narrow, and of nearly the ſame width from end to end.

ANTHROPOMORPHITES, a ſect of heretics, ſo denominated from the Greek, ſignifying man, and ſhape; for taking every thing ſpoken in ſcripture of God in a literal ſenſe, particularly that paſſage in Geneſis, in which it is ſaid, that God made man after his own image, imagined him to be in the ſhape of a man, having real hands, feet, &c.

ANTICHRIST, among eccleſiaſtical writers, a great adverſary of Chriſtianity, who is to appear upon earth before the end of the world.

ANTICOR, in farriery, an inflammation of a horſe's throat, being the ſame with the quincy in the human ſpecies.

ANTIDOTE, among phyſicians, a remedy againſt peſtilential diſeaſes. It alſo ſignifies a medicine which prevents the ill effects of poiſon.

ANTIENT, or ANCIENT, a term applied to things that exiſted long ago.

ANTIENT, in a military ſenſe, implies the enſign or colours.

ANTIENT, in naval affairs, the flag carried at the ſtern of a ſhip.

ANTIMONARCHICAL, a name given to whatever oppoſes monarchical government.

ANTIMONY, in natural hiſtory, a blackiſh mineral ſubſtance, ſtaining the hands, full of long, ſhining, needle-like ſtriæ, hard, brittle, and conſiderably heavy. It is found in different parts of Europe, as Bohemia, Saxony, Tranſylvania, Hungary, and France, commonly in mines by itſelf, intermixed with earthy or ſtony matters. Sometimes it is blended with the richer ores of ſilver, and renders the extraction of that metal difficult; antimony volatilizing a part of the ſilver, or, in the language of the miners, robbing the ore. Antimony is ſeparated from its natural impurities by fuſion in an earthen pot, whoſe bottom is perforated with a number of holes; the fluid antimony paſſing through, whilſt the infuſible matters remain behind. Antimony has been by many eſteemed a poiſon. In 1566, its uſe was prohibited in France by an edict of parliament; and in 1609, one Beſnier was expelled from the faculty for having given it. The edict was repealed in 1650; antimony having a few years before been received into the number of purgatives. In 1668, a new edict came forth, prohibiting its being uſed by any one but the doctors of the faculty. Others again have been extravagantly fond of it, and aſcribed to it extraordinary virtues, as Alexander Van Shuten, Glauber, and Faber: Baſil Valentine ranks it among the wonders of the world, and places it in a triumphal car. Thus much is certain, that antimony, in its crude ſtate, is not a poiſon, but a medicine of great efficacy; an excellent reſolvent and purifier of the juices, if given from four grains to half a dram, along with abſorbents: that it is capable of being rendered, by various operations and additions, either truly poiſonous, or more medicinal than in its crude ſtate: that its moſt virulent preparations may, by ſlight managements, be made ſalutary; and its moſt ſalutary ones virulent. Antimony is not a pure ſemimetal, but a ſulphurated ſemimetal. The ſulphur of antimony, purified from the metallic part, is perfectly the ſame with the common brimſtone of the ſhops, poſſeſſing the ſame properties, and anſwering the ſame uſes. As gold is the only metal (platina excepted) that totally reſiſts antimony or its ſulphur, this mineral has been called by the chymiſts *balneum ſolius ſolis, balneum regis, lupus, ultimus judex, &c.*

Metallic bodies ſeparated by fuſion, or dry precipitation, are commonly called Reguli, eſpecially when brittle. The metallic part of antimony, in particular, is diſtinguiſhed by no other name than that of regulus of antimony.

Pure regulus of antimony, is a bright ſemimetal, reſembling tin or duſky ſilver; without any thing of the bluiſh caſt of zinc, or the yellowiſh one of biſmuth. It is one of the lighteſt of the metallic bodies, (about ſeven times ſpecifically heavier than water, moderately hard, entirely brittle, and of a ſparkling plated texture.) In a fire not very ſtrong, it ſmokes copiouſly, and by degrees totally evaporates: by a gentler fire, continued for ſome time, it is changed into a whitiſh calx; which, on raiſing the heat, melts into a yellowiſh or reddiſh glaſs. Melted with ſilver, or the malleable metals, it renders them hard and brittle. It deſtroys the magnetic power of iron, which other metallic bodies only weaken in proportion to their quantity. It does not amalgamate, or not without great difficulty, with mercury: if a mixture of it with ſilver and copper be reduced into fine powder, even thoſe metals will not, in that ſtate, be acted upon by mercury. In the human body it acts as a virulent emetic and cathartic; and impregnates vegetable acids, as vinegar and acid wines, with thoſe virtues, almoſt inexhauſtibly. By ſulphur, and by calcination with nitre, its malignity is abated, and its emetic power changed into a diaphoretic one. As ſoon as it is reſtored to it pure metallic ſtate, it reſumes its virulence; which may be again deſtroyed, and again reſtored, and almoſt infinitely varied.

Preparations of ANTIMONY. The preparations of antimony are numerous. Lemery, in his Treatiſe on Antimony, deſcribes no leſs than two hundred; among which there are many good, and many uſeleſs ones. That gentleman was an excellent chemiſt, but an unhappy philoſopher: we may depend on his operations, but we ſhould diſtruſt his theory. With regard to the antimonials, the greater number even of the common preparations are unneceſſary; many of them differing little from one another, and all of them being either emetic or diaphoretic. The preparations of antimony may be ranged, according to the general operations by which they are produced, under four heads; thoſe obtained by ſolution, by diſtillation, by ſublimation, and by calcination.

All the antimonial ſulphurs are emetic and cathartic: thoſe which precipitate firſt are much more ſtrongly ſo than the powder which falls laſt; the laſt precipitates, if they prove emetic once or twice, ceaſe to have that effect upon continuing their uſe, and act chiefly as diaphoretics; and hence are greatly to be preferred to the firſt.

Butter of ANTIMONY.—For diſſolving the regulus of antimony without the ſulphur, the moſt concentrated ſpirit of ſalt, or aqua regis, is neceſſary. For obtaining the ſolution in ſpirit of ſalt, mercury ſublimate and powdered antimony are mixed together, and digeſted in a glaſs-retort placed in ſand: the marine acid in the ſublimate forſakes the mercury, and corrodes or diſſolves the antimonial regulus; whilſt the mercury of the ſublimate unites with the antimonial ſulphur. But the ſolution of the regulus, thus effected, cannot be commodiouſly ſeparated from the other matter but by diſtillation: on increaſing the fire, the regulus ariſes, diſſolved in the concentrated acid not in a liquid form, but in that of a thick unctuous ſubſtance, like butter; hence called butter of antimony. The butter liquifies by heat; and requires the cautious application of a live coal to melt it down from the neck of the retort. By rectification or expoſure to the air, it becomes fluid, but ſtill retains the name of butter. The addition of water, either in its thick or fluid ſtate, by diluting the acid, precipitates the regulus diſſolved in it. The proportions of ſublimate and antimony commonly employed, are three parts of the former to one of the latter.

Flowers of ANTIMONY are prepared by ſubliming either the crude antimony, or the regulus, with a number of aludels; the fire being kept up ſtrong, and a blaſt of air impelled occaſionally by a pair of bellows upon the matter in the ſubliming pot, to promote its evaporation. The antimonial flowers are in general of great activity, and though recommended by ſome as arcana in particular diſorders, require to be uſed with great caution.

Cinnabar of ANTIMONY.—After the diſtillation of butter of antimony, the mercury and the ſulphur, contained in the ingredients made uſe of for that proceſs, remain behind in the retort. This compound appears of a black colour; urged with a ſtronger fire than that which elevated the butter, it ſublimes into a red maſs, called cinnabar of antimony. This cinnabar has been by many preferred to the common factitious cinnabar, but on no juſt foundation: they both conſiſt of mercury combined with ſulphur; and the only difference betwixt them is, that the antimonial cinnabar contains ſomewhat more ſulphur than the other, and hence appears of a darker colour.

Glaſs of ANTIMONY.—This is chiefly prepared by ſome particular perſons at Amſterdam and Rouen, who have furnaces contrived on purpoſe for calcining large quantities of antimony with little expence of fuel. The glaſs may be eaſily made, by urging the calx in a crucible with a ſtrong fire, and throwing in, towards the end, a little crude antimony or ſulphur. When the vitrification is completed, the glaſs is poured on a copper plate, or on a flat ſtone. The glaſs of antimony is uſed only for making other emetic preparations, as the emetic wine, &c.

Hepar ANTIMONII, liver of antimony.—Equal parts of crude antimony and nitre mixed together, ſet on fire and ſuffered to deflagrate in an iron mortar, which may be covered with a perforated plate, or injected by degrees into an ignited crucible, yield a liver-coloured maſs, called hepar antimonii, which pulverized and edulcorated with water is named crocus metallorum. Two, three, or even one grain of either of theſe preparations occaſion violent anxieties and vomitings; though a dog will bear a dram, and a horſe a whole ounce, without being apparently any otherwiſe affected than in having the alvine diſcharge increaſed. The emetic wine, emetic tartar, and other medicines made from the glaſs, may alſo be made from the crocus.

Diaphoretic ANTIMONY.—One part of antimony and two and a half or three of nitre, mixed together and deflagrated, yield a calx void of all emetic power, called diaphoretic antimony.

Regulus of ANTIMONY.——The ſimple regulus of antimony is commonly prepared from equal parts of antimony, nitre, and tartar, mixed together and injected into a red hot crucible: when the whole is thrown in, the crucible is to be covered, a ſtrong fire kept up for a quarter of an hour, and the matter poured out into a conical mould, previouſly warmed and rubbed with greaſe. The yield of regulus will be larger, if the quantity of nitre is diminiſhed; or if the nitre and tartar are deflagrated together, in the proportion of one part of the former or two of the latter, before their mixture with the antimony. The ſalts are reduced by the deflagration into a black alkaline coal; this is the ſubſtance commonly uſed by the chemiſts for promoting the fuſion of metallic calces, and reviving them into their metallic form, and hence is diſtinguiſhed by the name of black flux. Some have been accuſtomed to ſave the expence of nitre, by taking potaſh or other alkaline ſalts: the regulus is in both caſes the ſame. When the matter is grown cold, the ſcoriæ found on the ſurface are knocked off, the regulus reduced into coarſe powder, melted in a freſh crucible, and about one fourth its weight of purified nitre injected upon it; this depuration may be twice or thrice repeated with ſmaller proportions of nitre, till the ſcoria become ſemitranſparent and of an amber colour.

Martial Regulus of ANTIMONY.——This preparation is obtained very commodiouſly from four parts of powdered antimony, two parts of iron nails or wire, and one part of nitre. The iron, made red-hot in a crucible, ſoon melts upon adding the antimony; after which the nitre is to be injected, the crucible covered, and the matter when brought into thin fuſion, poured expeditiouſly into a warm greaſed cone. The regulus freed from the ſcoriæ, is to be melted afreſh, with about one fourth its weight of nitre; and this purification, if neceſſary, repeated. If the regulus retains any ſuperfluous iron, it will look greyiſh, ſpongy, prove hard to break, and difficult of fuſion: in ſuch caſe, the ſcorification of all the iron, by means of nitre, would be a tedious work; but the addition of a little crude antimony, or common ſulphur, will abſorb it at once; and the injection of nitre will now ſoon complete the purification, and render the regulus of a ſparkling white colour. The ſcoriæ are yellow and ſemitranſparent like amber; if the quantity of nitre has not been too large, they prove an exceſſively ſtrong fiery alkali, diſtinguiſhed by the name of nitrum cauſticum. The yellow ſcoriæ, which ſeparate in the depuration of the ſimple regulus with nitre, are likewiſe alkaline, but want the cauſticity of theſe: the ſcoriæ produced from the martial regulus, by calcination with tartar, take fire on being expoſed to the air. If either regulus, after due purification, be haſtily poured into the mould whilſt in exceeding thin fuſion, and if the quantity of ſcoriæ covering the ſurface is conſiderable, the regulus, when grown cold, exhibits the appearance of a ſtar upon the top. For producing this appearance, there is no occaſion for any particular ſort of antimony, or any particular iron, or any particular conſtellation, or ſeaſon, or weather, as many have idly imagined; the whole depending upon the circumſtance abovementioned.

The ſimple regulus is caſt into cups, which, like thoſe made from the glaſs, communicate an emetic quality to wines; and into pills, like ſhot, which prove ſtrongly purgative, and do not loſe their virtue in paſſing through the body; whence their name pilulæ perpetuæ.

Tincture of ANTIMONY----There are various tinctures of antimony, which ſome have fondly imagined to participate of ſolar, venereal, antimonial, and other impregnations. They appear to be all no other than ſimple alkaline tinctures; their colour proceeding from the only matter of the ſpirit of wine, heightened by the cauſtic alkali. Spirit of wine conſiſts of an oil highly attenuated and combined with water into one ſeemingly homogene liquor: if the moſt highly rectified ſpirit, which exhibits no mark of any phlegm, be employed for making theſe tinctures, it will now yield in diſtillation a good quantity of water; the oil, before combined with that water, having been abſorbed by the alkali. If cauſtic alkaline ſalt, alone, be poured hot into rectified ſpirit, and the mixture digeſted for ſome time, a tincture will be obtained, not diſtinguiſhable from the antimonial. If ſulphur be added in either caſe, the tincture will receive a conſiderable taſte and ſmell from that ingredient.

ANTINOMIANS, in eccleſiaſtil hiſtory, certain heretics, who firſt appeared in the year 1535. They were ſo called, becauſe from rejecting the law, as of no uſe under the Goſpel diſpenſation. They held, that good works do not further, nor evil hinder, ſalvation; that God never chaſtiſes any land for their ſins; that murder, adultery, drunkenneſs, and the like, are no ſins in the children of God; that an hypocrite may have all the graces that were in Adam before his fall, &c.

* ANTIOPE, in fabulous hiſtory, was the wife of Lycus, king of Thebes, who being deflowered by Jupiter in the form of a ſatyr, brought forth Amphion and Zethus. Another Antiope was queen of the Amazons, and with the aſſiſtance of the Scythians, invaded the Athenians, but was vanquiſhed by Theſeus.

ANTIPARALLELS, in geometry. See CONE.

ANTIPATHY, a natural averſion of one body to another, the oppoſite to ſympathy.

ANTIPHRASIS, in rhetoric, a figure, by which, in ſaying one thing, we mean the contrary. See IRONY.

ANTIPODES, in geography, a name given to thoſe inhabitants of the globe that live diametrically oppoſite to each other. The antipodes lie under oppoſite meridians and oppoſite parallels; in the ſame degree of latitude, but of oppoſite denominations, one being north, and the other ſouth. They have nearly the ſame degree of heat and cold, days and nights of equal length. But in oppoſite ſeaſons, it is noon to one, when midnight to the other; and the longeſt day with the one, is the ſhorteſt with the other. We have ſaid the antipodes have nearly the ſame degree of heat and cold, not abſolutely the ſame of neceſſity; becauſe, firſt, there are many accidents to modify the action of the ſolar heat; ſo that people ſituated in the ſame climate, have not the ſame temperature of air. This may, in general, be accounted for by the interpoſition of mountains, the nearneſs or diſtance of the ſea, the winds, &c. Secondly, the ſun is not throughout the whole year at the ſame diſtance from the earth; it is ſenſibly at a greater diſtance in the month of June, than in January; from whence it follows, that *conſideratis conſiderandis*, our ſummer in England is not ſo hot as that of our antipodes, and our winter leſs cold. Nay, ice is found in the ſeas of the ſouthern hemiſphere, at a much leſs diſtance from the equator, than in thoſe of the northern hemiſphere. The horizon of one place being 90 degrees diſtant from the zenith of the other, it follows, that the antipodes have the ſame horizon ; it follows alſo, that when the ſun riſes to the one, he ſets to the other. The antients in general, treated this opinion with the higheſt contempt ; never being able to conceive how men and trees could ſubſiſt ſuſpended in the air with their feet upwards; for ſo they apprehended they muſt be in the other hemiſphere. They never reflected that theſe terms, upwards and downwards, are merely relative ; and ſignify only nearer to, or farther from, the center of the earth, the common center to which all heavy bodies gravitate ; and that, therefore, our antipodes have not their feet upwards and head downwards any more than ourſelves ; becauſe they, like us, have their feet nearer the center of the earth, and their heads further from it. To have the head downwards and feet upwards, is to place the body in a direction of gravity tending from the feet to the head ; but this cannot be ſuppoſed with regard to the antipodes ; for they, like us, tend towards the center of the earth, in a direction from head to foot. We have conſidered the antipodes here as being placed diametrically oppoſite on the terreſtrial globe ; ſo that a perpendicular or vertical line being drawn through any place whatever, and which conſequently paſſes through the zenith of that place, the oppoſite part on the ſurface of the globe, which this vertical line continued would cut, is the ſituation of the antipodes to that place : this depends on a ſuppoſition of the earth's being a perfect ſphere ; for if the earth be not a perfect ſphere, but an oblate or prolate ſpheroid, there are no reciprocal antipodes : that is, for inſtance, if a line be drawn through the zenith of London, and center of that city, which is in the northern hemiſphere, this line would cut the ſouthern hemiſphere in a point which will be diameteically oppoſite to London ; but London then will not be the antipodes to this place. Thus the reciprocal equality of ſituation, latitude, day and night, in the oppoſite hemiſpheres at ſix months diſtance, and all that we are uſed to include in the idea of antipodes, as inſeparable from it, is no longer ſo ; and muſt alter, in proportion as the figure of the earth deviates from a true ſphere. A little attention will convince us of this. What we have advanced is founded on this poſition, that the ſphere, or, to render the theory more ſimple, the circle, is the only regular figure which all diametrical lines drawn through the center cut at right angles : therefore, in every figure terminated by another kind of curve, to inſtance in the ellipſis, the perpendicular drawn to one of its foci, or to its tangent, except the two axes which correſpond to the polar line, or a diameter drawn at the equator, will not paſs through the center, nor cut the oppoſite part of the ellipſis at right angles ; therefore the nadir of Paris or London is not the zenith of their reſpective antipodes. So if, in the center of London or Paris, a perpendicular column were erected, and another in their reſpective antipodes, it would not make the ſame right line, but would form an angle more or leſs acute, in proportion as the ellipſis departed more or leſs from a circle ; and, conſequently, the latitude, days, nights, ſeaſons, &c. would alter in the ſame proportion. Places ſituated under either pole, or on the equator, are excepted for the reaſon we have before ſuggeſted ; becauſe, in the former caſe, it is one of the axes of the ellipſis that joins both foci, and in the latter it is always a circle, the other axis of which is the diamer of the ellipſis ; the ſpheroid, however oblate or prolate, being always ſuppoſed to reſult from the revolution of the elliptical meridian round the axis of the world. See *Hiſtory Acad.* 1741.

ANTIPTOPSIS, in rhetoric, a figure which puts one caſe for another.

ANTIQUARIAN *Society*.---A ſociety of antiquaries was formed in the city of London, 1580, by ſome of the moſt learned men in the kingdom ; but, having been frequently interrupted and diſcontinued, very little can be ſaid concerning it till 1717, when it was again revived by a number of gentlemen, ſtudious of antiquity in general, but more particularly deſirous to obtain all poſſible knowledge of the antiquities of their own country. With this view they agreed to meet one evening in every week under certain regulations ; they encouraged correſpondencies with all parts of the kingdom ; they ſubſcribed an annual ſum to defray the expence of engraving on copper-plates, what ſhould be thought deſerving to be ſo preſerved, and limited their number to 100. And in this manner they continued their weekly meeting with great reputation. till his majeſty king George II. was graciouſly pleaſed to grant them a royal charter of incorporation, dated November 2, 1751 ; and to declare himſelf their founder and patron. Under this charter they became a body corporate, by the name of the Society of Antiquaries of London, with a power to have and uſe a common ſeal, to ſue and be ſued, and to take, hold, and enjoy by purchaſe, gift, or otherwiſe, any lands, tenements, or hereditaments, not exceeding in the whole one thouſand pounds per annum. And it is therein directed, that the council of the ſaid ſociety ſhall at all times conſiſt of twenty-one perſons, the preſident, for the time being, always to be one: and Martin Folkes, Eſq. was by charter appointed the firſt preſident; and alſo twenty other perſons therein named to be the firſt council, empowering them, within two months from the date thereof, to nominate, chooſe, and admit, as fellows of the ſaid ſociety, ſuch perſons as ſhould excel in the knowledge of the antiquities and hiſtory of this and other nations, and be eminent for piety, virtue, integrity, and loyalty. This firſt preſident and council were to continue till the 23d day of April next enſuing, on which day, in every year hereafter, the council and fellows aſſembled to nominate and elect a preſident and council for the enſuing year; and it was particularly directed that eleven of the former council ſhould be continued, and ten other perſons choſen out of the members of the ſociety; ten and no more of the council being to be changed annually. The preſident is empowered to nominate four perſons of the council to be his deputies, and ſupply his place in caſe of ſickneſs or abſence; and the preſident, council, fellows, or any twenty-one or more, are empowered to make ſtatutes, rules, orders, and bye-laws, for the government and direction of the ſaid ſociety, their eſtates, goods, &c. and for the admiſſion and amoval of all and every the members and officers thereof. And the preſident, council, and fellows, may at any time appoint treaſurers, ſecretaries, and clerks, may have and employ one ſerjeant at mace, and ſuch other ſervants as they think neceſſary. And laſtly, if at any time abuſes or differences ſhould ariſe, the archbiſhop of Canterbury, the lord chancellor, or keeper of the great ſeal, and the lord privy ſeal, and the two ſecretaries of ſtate for the time being, were appointed viſitors, with the full power for any three of them to compoſe and redreſs ſuch differences and abuſes: proviſion is alſo made to fill up any vacancies that ſhould happen by the death of the preſident or any of the council. On the receipt of this charter, the firſt preſident and council nominated and admitted, by a writing dated the 14th of November 1751, all the former members, together with ſome others, in the whole one hundred and twenty-one, to be fellows of the ſaid Society of Antiquaries of London; and ſoon after drew up a body of ſtatutes for the good government thereof, which was unanimouſly agreed to and confirmed in the month of July 1752. It was enacted, that the number of members ſhould not exceed one hundred and fifty: but that number being very ſoon filled up, and ſeveral men of quality and fortune, as well as perſons of great learning and eminence, being continually applying to become members, which they could not be till the vacancies ſhould happen by death, the ſociety thought proper, in the year 1755, to enlarge their number to one hundred and eighty, (to which they are limited at preſent) excluſive of peers, privy-counſellors, and judges, that ſhould be choſen after that time. A little before this, the ſociety gave up the management of their eſtate and revenues, the payment of monies, and the publication of their papers and drawings, which before were in the body in general, and thereby attended with many inconveniencies, entirely to the care of their council, which are now a ſtanding committee for that purpoſe; and thereby the government of this ſociety is become nearly the ſame as that of the Royal Society, which was doubtleſs a proper pattern to copy after. On the 23d of April, being St. George's day, the ſociety annually elect their council and officers, viz. a preſident, a treaſurer, two ſecretaries, and a director, who has the care of all their publications. Then the preſident appoints four of the council to be his deputies, or vice-preſidents: and after the election is over, the ſociety dine together at their own expence.

Every perſon deſirous to be elected a fellow of this ſociety, except peers, privy-counſellors, or judges of Great Britain or Ireland, muſt be recommended by three or more of the members, in a paper ſigned by themſelves, ſpecifying the name, addition, profeſſion, and chief qualification of the candidate, and alſo the place of his abode. When this has been read at one of the ſociety's meetings, and then hung up in their public room, during the time of four other meetings, the election is determined by ballot. Peers, privy-counſellors, and judges of Great Britain or Ireland, if propoſed by any ſingle member, muſt be balloted for immediately. Every new member muſt pay an admiſſion-fee of five guineas, and ſign the obligation, whereby by he promiſes that he will, to the utmoſt of his power, promote the honour and intereſt of the ſociety, and obſerve the ſtatutes and orders thereof: which being done, he is led up to the chair, when the preſident or vice-preſident riſing, takes him by the hand and ſays, " I do, by " the authority, and in the name of the " Society of Antiquaries of London, " admit you a fellow thereof." Every member muſt further pay one guinea annually for the uſe of the ſociety, or ten guineas an once in lieu of all contributions. The meetings of this ſociety are on Thurſday evenings weekly, from about ſix till nine o'clock. Their buſineſs is to receive, read, and conſider all informations from their own members, or others, concerning the antiquities of all nations; (for which purpoſe they admit eminent foreigners to be correſponding members) but they more particularly attend to the ſtudy of the ancient hiſtory, cuſtoms, manners, grants, charters, coins, medals, camps, churches, cities, and all monuments whatever, eccleſiaſtical, military, or civil, which are found in or relate to Great Britain and Ireland; and the communications they have received concerning theſe matters muſt be very valuable, as may be judged by the many curious remains of antiquity they have cauſed to be engraved on copper-plates, and permitted lately to be ſold; though as yet they have not thought fit to publiſh any of their diſſertations. They have a ſmall but choice, library, which is increaſing daily: alſo a fine collection of prints and drawings.

ANTIQUARY, one who ſtudies and ſearches after remains of antiquity.

ANTIQUE, a term moſt in uſe among architects, ſculptors, and painters; they make uſe of it to expreſs pieces of architecture, ſculpture, or painting, executed in the ages when thoſe arts were carried to the higheſt perfection, by men of the fineſt genius in Greece and Rome; that is, from the age of Alexander the Great, to the reign of the emperor Phocas, about the year of our Lord 600. Antique in this ſenſe is oppoſed to modern; thus we ſay an antique edifice, buſto, baſſo relievo, or manner; an antique model; and of a ſtatue, that it is in an antique taſte. We have ſeveral antique pieces of ſculpture left, as the Laocoon and Venus in the poſſeſſion of the family of Medicis, the Apollo and Hercules of the houſe of Farneſe, &c. Antique paintings are more ſcarce; we have only the wedding of Aldobrandinus, ſome little figures of the pyramid of Ceſtius, a Venus which is the palladium of Rome; and ſome ſmall pieces in freſco, preſerved out of the ruins of the baths of Titus and Heraclius. Some ſculptors have counterfeited antiques ſo nicely as to impoſe on the judgment of the public; witneſs the famous ſtory of Michael Angelo's Cupid.

ANTIQUITY, *Antiquitas*; a term uſed to denote paſt ages.

Thus we ſay, the heroes of antiquity, traces or veſtigia of antiquity, monuments of antiquity.

We make uſe of the ſame word to expreſs what is left us of the ruins, monuments, remains, &c. of the ancients.

In this ſenſe we ſay a maſter-piece of antiquity; a fine piece of antiquity; Italy, France, and England, are full of antiquities. Antiquity is alſo taken for any thing that is ancient. In this ſenſe we ſay, the antiquity of a kingdom, a cuſtom, or any thing of the like nature.

ANTIRRHINUM, ſnap-dragon, or calf's ſnout, in botany a genus of plants, of which bonatiſts enumerate twelve ſpecies. All the ſorts of ſnap-dragon are pretty ornaments in a garden, and, requiring a very little culture, are rendered more acceptable. They are all hardy plants, and will reſiſt the cold of our winters extremely well, eſpecially if they are planted on a dry, gravelly, or ſandy ſoil; for, when they are planted in a rich moiſt ſoil, they will grow very luxuriant for a while, but are very ſubject to rot in autumn or winter; and are much more ſuſceptible of cold, than when they are in a dry, hungry, rocky ſoil; they will grow in the joints of old walls, where they may be placed ſo as to make ſome abject part of the garden agreeable; for they will continue in flower for ſeveral months; and if the ſeeds are permitted to ſhed, there will be a continual ſupply of young plants, without any trouble. Wherever thoſe plants are deſigned to grow upon walls, or on a rocky barren ſoil, the ſeeds ſhould be ſown the beginning of March, where they are deſigned to remain (for if the plants are firſt raiſed in a better ſoil, and aſtewards tranſplanted into thoſe places, they ſeldom ſucceed well.) When the plants are come up, they will require no other culture, but to keep them clear from weeds; and where they come up too thick, to pull ſome of them out; ſo as to give them room to grow. In July theſe ſorts will begin to flower, and will continue flowering till the froſt prevents them. Thoſe plants which grow on walls, will be ſtrong, and have woody ſtems, which will continue two or three years or more. *Miller's Gard. Dict.*

ANTISCII, in geography, thoſe who live on different ſides of the equator.

ANTISCORBUTICS, among phyſicians, medicines good in all ſcorbutic caſes. See SCURVY.

ANTISEPTICS, among phyſicians, a name given to all ſubſtances that reſiſt putrefaction. Dr. Pringle, was, in an appendix to his Obſervations on the Diſeaſes of the Army, the firſt, who gave a very curious and uſeful ſet of experiments on antiſeptics.

ANTISTHROPHE, in the ancient drama, the ſtanza repeated by the chorus to the audience on the left-hand; the word being derived from the Greek, ſignifying, againſt, and to turn. Thus the ſtrophe ſignifies the ſtanza, or thoſe verſes which the chorus ſing, turning themſelves towards the ſpectators on the right hand; and the antiſtrophe means the ſame ſtanza ſung by the chorus turning themſelves towards the audience on the left. In rhetoric, the antiſtrophe or epiſtrophe ſignifies repartee; as for example, if, after having ſaid the man of ſuch a maſter, we add, and the maſter of ſuch a man; this laſt phraſe is an antiſtrophe, or expreſſion, in reply to the firſt. This is alſo a term uſed in ancient lyric poetry. Among the Greeks, the antiſtrophe made one of the three parts of their ode; the other two were called the ſtrophe and epode.

ANTITHESIS, in rhetoric, a figure of ſpeech, which conſiſts in oppoſing the thoughts to each other, in order to place their oppoſite qualities in a more conſpicuous point of light.

ANTITHESIS, in grammar, a figure whereby one letter is ſubſtituted in the room of another; as when Virgil ſays, *olli* for *illi*, in order to make a kind of oppoſition.

ANTITRINITARIANS, thoſe who deny the Chriſtian doctrine of the Trinity; but particularly applied to the Arians and Socinians.

ANTITYPE, a Greek word, ſignifying according to the true import of the word, a type which anſwers to another type, or rather that which is in the place of a type.

ANTLER, among ſportſmen, a ſtart or branch of a deer's horn.

Brow ANTLER ſignifies the branch next the head.

Bes ANTLER, the branch next above the brow antler.

ANTŒCI, in geography, thoſe inhabitants of the earth who live under the ſame meridian, and at the ſame diſtance from the equator, the one towards the north, and the other towards the ſouth. The Antœci have exactly the ſame hours of the day and night, but oppoſite ſeaſons; the ſhorteſt winter's day of the one being the longeſt ſummer's day with the other; and conſequently the length of the night with the one, is equal to the length of the day with the other.

* ANTONIA, daughter of Marcus Antonius and Octavia, one of the moſt beautiful and virtuous princeſſes of her time, married Druſus, the brother of Tiberius, by whom ſhe had Germanicus, an accompliſhed prince, Claudius, who was afterwards emperor, and Livia, who rendered herſelf infamous by her crimes. Though ſhe loſt her huſband while ſhe was young, ſhe could never be prevailed upon to marry again, and thus gave an excellent example of continence in a debauched court. Antonia diſcovered to Tiberius the deſigns of Sejanus. She had at firſt ſome ſhare in the management of affairs under Caligula, her grandſon; but he at length gave her ſo much vexation, that ſhe died A. D. 38. She was probably poiſoned by that unnatural prince.

Tower of ANTONIA, in antiquity, the moſt magnificent monument which Herod the Great ever built; he gave it that name in memory of Anthony his friend: it was built on the hill of Jeruſalem formerly called Barri.

ANTONIAN *Water*, the name of a medicinal water of Germany, remarkably pleaſant to the taſte, and of ſervice in many caſes as a medicine.

* ANTONIUS (MARCUS) the triumvir, generally called by Engliſh Writers Mark Antony, was the ſon of Marcus Antonius Creticus. He was beautiful in his youth, and adorned with many amiable qualities; but Curio, who loved him, plunged him into all manner of vices, and afterwards paid the debts he had contracted by his debaucheries. He alſo eſteemed Clodius; but ſoon growing diſguſted with him, went into Greece, where he exerciſed his body in military labour, and his mind in the ſtudy of eloquence. He was at length ſent by Gabinius againſt Ariſtobulus, whom he conquered and took priſoner; and afterwards followed Gabinius into Egypt, where he diſtinguiſhed himſelf by his clemency and valour. At his return to Room he embraced Cæſar's party, and Marcus Antonius went with Quintius Caſſius, in the diſguiſe of ſlaves,

to Cæſar's camp in Gaul, adviſing him to march into Italy. Cæſar having made himſelf maſter of Rome, rewarded Marcus Antonius with the government of Italy, and at the battle of Pharſalia, gave him the command of the left wing of his army. The next year, Cæſar being created dictator, made Marcus Antonius general of the horſe; and five years after, his collegue in the conſulſhip; ſoon after which Cæſar was aſſaſſinated. Antonius then aſſembled the ſenate, when reading Cæſar's will, and ſhewing his bloody robe, he harangued the people with ſuch ſucceſs, as to excite a ſedition. His power now encreaſed every day; but having quarrelled with Octavius, who was a favourite of the people, he retired to Gaul. The ſenate ſuſpecting he aſpired to the throne, ſent Octavius and the conſuls C. Panſa and A. Hirtius againſt him. Antonius however defeated them near Mutina, and was afterwards defeated in his turn: but he had the addreſs to bring over the ſoldiers of Lepidus to his party; he alſo brought over Plancus to his intereſt; and having raiſed ſix legions in Gaul, marched into Italy with ſeventeen legions and ten thouſand horſe. This obliged Auguſtus and Lepidus to enter into a league with him, and thus was formed the celebrated triumvirate, that became fatal to Cicero, and ſo many great men. The triumvirate having ſufficiently confirmed their power, determined on the death of Brutus and Caſſius. Octavius and Antonius marched againſt them into Macedonia, and defeated them, when Caſſius was ſlain by Antonius's order and Brutus killed himſelf. After their death they divided the empire among themſelves: Auguſtus had Europe; Lepidus, Africa; and Marcus Antonius, Greece and Aſia; where he conceived a violent paſſion for Cleopatra, queen of Egypt. During his abſence, Fulvia, his wife, had a quarrel with Octavius, which occaſioned a new rupture, but this war was but juſt begun when Fulvia died, and her death produced a freſh union, one of the conditions of which, was, that Antonius ſhould marry Octavia, the ſiſter of Auguſtus. Antonius, ſtill paſſionately fond of Cleopatra, left his children, and Octavia, to go to Cleopatra in Egypt, and Octavia left Rome to bring back her huſband to his duty.; but Antonius ordered her to ſtop at Athens. This contempt, together with other motives, rekindled the war, which was terminated by the famous naval battle of Actium, thirty-one years before the Chriſtian æra. Cleopatra, who had brought ſixty veſſels to Antonius's aſſiſtance, fled; Antonius followed her, and by that means loſt the victory. The next year Auguſtus entered Egypt, and firſt ſeized Peluſium, Antonius fell on his cavalry and defeated them; but he was at length conquered: after that, Cleopatra cauſing him to be told that ſhe had killed herſelf, he ran a ſword through his body; but not dying immediately, and hearing that Cleopatra was ſtill alive, he cauſed himſelf to be carried to her, and died in her arms, in the fifty-ſixth year of his age. Antonius was a brave and excellent general; a tender generous friend; was eloquent and capable of ſupporting the inclemencies of the ſeaſon; but his fooliſh fondneſs for Cleopatra, was the cauſe of all misfortunes,

ANTONOMASIA, in rhetoric, a figure by which the noun appellative is uſed inſtead of a proper name, and the contrary. Thus becauſe Sardanapalus was a voluptuous prince, and Nero a cruel emperor, we give an epicure the name of Sardanapalus, and a barbarous prince the appellation of Nero.

* ANTWERP, a city in the Auſtrian Netherlands, ſeated on the Scheld, in the duchy of Brabant, and the capital of a marquiſate of the ſame name. It is a biſhop's ſee, and has very regular fortifications. It is ſeven miles in circumference, and ſurrounded with a beautiful wall, with baſtions faced with ſtone. The top of the wall is two hundred feet broad, and planted on each ſide with rows of trees, between which there are walks, with a moſt delightful proſpect of the adjacent country. The ſtreets are broad and regular, the buildings magnificent, and the whole beautiful and uniform. There are twenty-two ſquares, two hundred ſtreets, eight great canals, and ſeventy-four bridges. The cathedral church is a noble pile, the ſteeple being one of the fineſt in the world, from whence may be ſeen Ghent, Mechlin, and Louvain. The altars are adorned with fine paintings, ſome of them by Rubens. The Jeſuits' church there is one of the fineſt in Europe, for its dimenſions, workmanſhip, and paintings. All the inſide is of white marble, intermixed with jaſper, porphyry, and gold; and the cieling is embelliſhed with forty-eight pictures of Rubens. There are ſeveral convents particularly one for Engliſh nuns of St. Tereſa, who never wear linen, nor eat fleſh, but lie upon ſtraw. Joining to the ſtreet called the Mere, ſtands the Exchange, which is the model of the Royal Exchange. It is placed in

the centre of four large ſtreets, and the walks on each ſide are ſupported by forty-three pillars of blue marble, but none of them are alike. Underneath there are magazines, or warehouſes, for the merchants goods ; and above, an academy for painting, ſculpture, architecture, and the mathematics.

The citadel is one of the ſtrongeſt and moſt regular in the world. It is of a pentagonal figure, and has five royal angles. The French beſieged and took it in 1746. The markets here are at their proper diſtances, every one being in a ſquare. Antwerp had formerly a moſt flouriſhing trade, but it is now removed to Amſterdam, and other towns of Holland, the Dutch having built forts at the mouth of the Scheld. The city is governed by nine perſons, taken from the nobility, and as many are nominated by the prefects or maſters of the ſtreets, who, with eighteen of the principal citizens, make thirty-ſix ; theſe are preſented to the prince, who appoints one half of them for a ſtanding ſenate ; which afterwards chooſe two burgomaſters, or conſuls ; one of whom repreſents the city at the convention of the eſtates, and the other adminiſters juſtice at home, having with the ſenate the cognizance of all cauſes, civil and criminal. The city has alſo a ſheriff, for the apprehending and executing malefactors ; and a ſolicitor-general to proſecute offenders in behalf of the city. Long. 4. 15. E. Lat. 51. 12. N.

ANUBIS, in mythology, a name given to Mercury, who was worſhipped by the Egyptians under the figure of a dog. Diodorus Siculus tells us, that Anubis, following his father Oſiris to war, bore the enſign of a dog on his ſhield ; for which reaſon he was worſhipped, after his death, under the figure of a dog.

ANVIL, in mechanics, a ſmith's utenſil, on which the work is forged or hammered.

ANUS, in anatomy, the extremity of the inteſtinum rectum, or orifice of the fundament. It is ſurrounded with a large quantity of fat, that it may eaſily dilate in diſcharging its contents, and is furniſhed with three muſcles, called elevatores and ſphincter. See SPHINCTER.

ANUS is alſo the name of a ſmall aperture in the third ventricle of the brain, leading to the fourth ventricle of the cerebellum.

AONIDES, in mythology, one of the many appellations of the muſes, ſo called from the Aonian mountains in Bœotia, where they were feigned to reſide.

AORASIA, in antiquity, inviſibility of the Gods.

The opinions of the ancients, with regard to the appearance of the gods to men, was, that they never ſhewed themſelves face to face, but were known by their backs as they withdrew : whence it followed, according to them, that every being they had time to look at in the face, was not a deity.

AORISTUS, in the Greek grammar, an indefinite or indeterminate kind of tenſe, which ſometimes expreſſes the preſent time, ſometimes the future, but moſt frequently the paſt. The word is compounded from the Greek, to bound or limit.

AORTA, in anatomy, the great artery which riſes immediately from the left ventricle of the heart, and thence diſtributed to all parts of the body. It is divided into two grand trunks, diſtinguiſhed by the epithets aſcending and deſcending. See ARTERY.

APARINE, gooſe-graſs, or cleavers, in botany, a plant with a ſlender fibrous root ; and ſlender, quadrangular, geniculated, rough, climbing ſtalks, five or ſix feet long. It is met with almoſt every where in hedges. It is inciding and aperient, and not only promotes urine, but ſweat ; two ounces of the juice have been found to be very ſerviceable in the dropſy, carrying off the water by urine.

APARTMENT, a portion, or part of a houſe, containing the neceſſary conveniencies for a perſon to reſide in it.

APATHY, among the ancient philoſophers, implied an utter privation of paſſion, and an inſenſibility of pain. The Stoics affected an entire apathy ; they conſidered it as the higheſt wiſdom to enjoy a perfect calmneſs or tranquility of mind, incapable of being ruffled either by pleaſure or pain. The primitive Chriſtians uſed the word to expreſs a contempt of the things of this world.

APE, in natural hiſtory, an animal of the monkey kind. It is hairy all over the body, ſomewhat reſembling a man in the face, noſtrils, ears, and teeth. It has alſo eye-laſhes, on both the eye-lids ; whereas other quadrupeds have none except on the upper. On the breaſt it has paps, and the arms are like thoſe of a man, but hairy, and he bends them as well as the feet, like a human creature. Beſides, it has hands, fingers, and nails, like thoſe of a man, but more rough and unpoliſhed. The feet are like larger hands, and are divided into fingers, or toes, of which the middle finger is the longeſt.

An ape, properly ſo called, is without a tail; and thoſe that have tails go under the name of monkeys, of which there are ſeveral kinds. See Monkey.

APEEK, in navigation, the anchor is ſaid to be apeek when ſo much of its cable is drawn or heaved into the ſhip, as to bring her ſtem perpendicular to it.

APERIENS *Palpebram rectus*, in anatomy, a muſcle in the eye-lid.

APERIENTS, in the materia medica, medicines that facilitate the circulation of the juices in their containing veſſels, by removing all obſtructions. See Deobstruents.

APERTURE, the opening of any thing, or a hole, cleft, or vacant place in ſome continuous ſubject.

APERTURE, or APERTION, in architecture, ſome opening, as a door, window, chimney, &c. There ſhould be as few apertures as poſſible; it being a maxim that every aperture or opening has a tendency to weaken the building.

APERTURE, in optics, the hole next the object glaſs of a teleſcope, or microſcope, through which the light and image of the object come into the tube, and are thence carried to the eye; it conſiſts of a turned bit of wood, or plate of tin, with a round hole of a convenient diameter in the middle thereof.

APERTURE is alſo underſtood of that part of the object glaſs itſelf, which covers the former, and which is left pervious to the rays. See Telescope.

M. Auzout affirms, that he found that the apertures of teleſcopes ought to be nearly in the ſubduplicate ratio of their lengths: but Huygens, who firſt introduced the uſe of apertures, aſſures us, he found, by experience, that the aperture of an object glaſs, ex. gr. of 30 feet, is to be determined by this proportion, as 30 to 3; that is, As 10 to 1, ſo is the ſquare root of the diſtance of the focus of any glaſs, multiplied by 30, to its aperture; and the focal diſtances of the eye-glaſſes are to be proportional to the apertures.

The greater or leſs aperture of an object glaſs, it is to be noted, does not increaſe or diminiſh the viſible area of the object; all that is effected by this is, the admittance of more or fewer rays, and conſequently the more bright or obſcure appearance of the object.

Hence, in viewing Venus through a teleſcope, a much leſs aperture is to be uſed than for the Moon, Jupiter, or Saturn; becauſe her light is ſo vivid and glaring: which conſideration does a little invalidate M. Auzout's proportion, as is ſhewn by Dr. Hook. *Philoſ. Tranſ.* No 4.

APETALOSE, or APETALOUS, among botaniſts, an appellation given to ſuch plants as have no petals or flower leaves.

APEA, the vertex or ſummit of any thing. See Vertex.

APHÆRESIS, in grammar, a figure by which a letter or ſyllable is cut off from the beginning of a word.

APHELION, or APHELIUM, in aſtronomy, that point of the earth's or a planet's orbit, in which it is the fartheſt diſtant from the ſun that it can be. The aphelia of all the primary planets are not at reſt; for thoſe of the planets neareſt the ſun, viz. Mercury, Venus, the Earth, and Mars, being acted upon by Jupiter and Saturn, move a ſmall matter in conſequentia, or according to the order of the ſigns; and that in the ſeſquiplicate ratio, or the ſquare roots of the cubes of the diſtances of thoſe planets from the ſun. Hence, if the aphelion of Mars move 35 minutes in conſequentia, or according to the order of the ſigns, in 100 years, the aphelia of the Earth, Venus, and Mercury, will move, in 100 years, 18′, 36″, 11′, 27″, and 4′, 29″.

The method of finding the place of the aphelion is by obſerving ſeveral of the greater digreſſions of the planet from the ſun, till by two or three repeated obſervations it be found to remain at a ſtand.—In the Philoſ. Tranſ. No. 128, we have a geometrical method of finding the aphelia of the planets, given by Dr. Halley.

Kepler places the aphelion of Saturn, for the year 1700, in 28°, 3′, 44″, of Sagittarius: de la Hire, in 29°, 14′, 41′. The aphelion of Jupiter in 8°, 10′, 40″, of Libra: de la Hire, in 10°, 17′, 14′. The aphelion of Mars 0°, 51′, 29″, of Virgo: de la Hire, in 0°, 35′, 25″. The aphelion of the earth in 8°, 25′, 30″. of Cancer. The aphelion of Venus in 3°, 24′, 27″, of Aquarius: de la Hire, in 6°, 56′, 10″. And the Aphelion of Mercury in 15°, 44′, 29″, of Sagittarius: de la Hire, in 13°, 3′, 40″.

The annual motion, according to Kepler, of the aphelion of Saturn, is 1′, 10″, of Jupiter, 47″, of Mars, 1′, 7″, of Venus, 1′, 18″, and of Mercury, 1′, 45″. According to De la Hire, that of Saturn is 1′, 22″, of Jupiter, 1′, 34″, of Mars, 1′, 7″, of Venus, 1′, 26″, and of Mercury, 1′, 39″.

APHORISM, a maxim or principle of of ſome ſcience; or a ſentence comprehending, in a few words, a great deal of matter.

APHRODISIA, in antiquity, feſtivals in honour of the goddeſs Venus. There were ſeveral of theſe Aphrodiſia obſerved in divers parts of Greece; the moſt remarkable was that at Cyprus, firſt inſtituted by Cinyras, out of whoſe family certain prieſts of Venus were elected; At this ſolemnity ſeveral myſterious rites were practiſed: all who were initiated to them offered a piece of money to Venus as an harlot, and received, as a token of the goddeſs's favour, a meaſure of ſalt, and a *phallus*; the former becauſe ſalt is a conacretionſea of water, to which Venus was thought to owe her birth; the latter, becauſe ſhe was the goddeſs of wantonneſs.

APHRODITES, in natural hiſtory, a name given by ſome authors to the fineſt ſpecies of amethyſt.

APHTHÆ, in medicine, ſmall round ſuperficial ulcers ariſing in the mouth. Mel roſatum, or honey of roſes, acidulated with ſpirit of vitriol, is a good medicine in the cure of the aphthæ.

APIARY, a bee-houſe, or place where bees are kept, and properly furniſhed with all the apparatus neceſſary for that purpoſe.

The word is formed from the Latin, *apis*, a bee.

Methods of making an APIARY.—— When there are but few bees, it is uſual to ſet them in any corner of the garden, or court, and ſometimes in cloſes adjoining to the houſe; though ſome, for want of room without doors, have ſet them in lofts or upper rooms; but this is not ſo proper for them. If a perſon intends to have a conſiderable ſtore of bees, a plat muſt be made by itſelf, proportioned to the number of bees intended to be kept, not quite a ſquare, being rather longer, extended from eaſt to weſt, but ſo contrived that they may have as much of the morning and evening ſun as poſſible. The apiary ſhould be ſecurely defended from high winds on either ſide, either naturally by hills, trees, &c. or artificially by houſes barns, walls, &c. It is alſo to be well fenced from cattle, eſpecially hogs, and from all ſorts of fowl, their dung being very prejudicial to them; neither ſhould there be any ill ſmells, nor any poultry kept near the place. The apiary ſhould be furniſhed with ſtools or benches, of wood or ſtone; but the firſt is beſt, ſtone being hot in ſummer, and cold in winter: theſe are placed at different heights, but about twelve inches is a good height; they ſhould be ſet a little ſhelving, that the rain may run off; they ſhould alſo be two or three inches wider than the hives ſet upon them, and at leaſt five feet diſtant from the other. To have a compleat apiary, for every ſtock of bees intended to be kept, make a cot or houſe about two feet ſquare, and two and a half high, ſet on four legs about ten inches above the ground, covered over with boards or tiles to keep off the rain, the back or north ſide being cloſed up; and the ſides, facing the eaſt and weſt, to have doors with latches and haſps to them; the fore or ſouth ſide to have a falling door to cover one half thereof, which is to be raiſed up at pleaſure; and in ſummer time ſerves for a pent-houſe, not only to keep off the beating rains from the hives, but to defend them from the extreme heat of the ſun, which at noon-day is apt to melt the honey. The other lower half ſhould have two ſmall doors to open to either hand, which will ſerve to defend the doors or holes of the hives from injurious winds: all the doors may be faſtened in winter, when the weather is too cold; or in ſummer, when it is too hot for the bees, only making a little open ſquare at the bottom of the little doors againſt the bee hole, that the bees may have ſome liberty to fly abroad, after the doors have been ſhut: by means of the ſide doors, eſpecially if the weſt door be made to open to the right hand, a perſon may ſit ſafe, and ſee the ſeveral workings of the bees in glaſs hives, if any ſuch are uſed; if not at theſe places he may order, view, and obſerve them better than when they ſtand on naked ſtools, and with leſs offence to the bees, and more ſecurity to himſelf. In the winter ſeaſon, if the apiary ſtand cool, good ſweet ſtraw may be ſtuffed within the doors about the hives, to keep them warm; but extremity of cold does not hurt bees ſo much in winter as wet, from which theſe caſes beſt preſerve them; or as light, and the warm beams of the ſun, at ſuch time when there is no proviſion abroad for them, againſt which this houſe or cot is the beſt preſervative; for, when the doors are ſhut, though the ſun ſhines, yet they are inſenſible of it, the hives ſtanding ſix or eight inches within the doors; whereas, after the common way of benches or ſtools, the ſun caſts rays to their very doors, which warmth, and light together, draw them out, at the expence of their proviſions and lives together, as is evident from frequent experience, the mildeſt and cleareſt winters ſtarving and deſtroying moſt bees; when, on the contrary, the coldeſt and moſt frozen beſt ſecure them. See BEE.

APICES, in botany, little knobs growing on the tops of the ſtamina, or cives in the middle of flowers.

APIOS, the knobbed-rooted Virginian liquorice vetch, in botany, a genus of plants, of wheat. There is, at preſent, but one ſpecies known to us, which is, apios Americana Cornuti; the American apios of Cornutus.

APIS, in mythology, a deity among the Egyptians, repreſented by an ox, with certain external marks. Into this animal, according to the Egyptians, the ſoul of the Great Oſiris retired, and withdrew itſelf from the world. He gave this creature the preference, becauſe the ox is the ſymbol of agriculture, the perfection of which this prince had very much at heart. The ox, apis, muſt have a ſtar in the forehead; that is, a ſquare white mark, the figure of an eagle on his back, a knot under his tongue in the form of a beetle, the hair of his tail double, and a creſcent on his right flank; and the cow that bore him muſt have been conceived by a clap of thunder. As it is difficult to apprehend nature ſhould produce an animal with all theſe marks, requiſite for an apis, we muſt ſuppoſe that the prieſts took care, by impreſſing the neceſſary marks on young calves, to be provided always with one.

APIUM, in botany, an herb called in Engliſh parſley. See Parsley.

APIUM *Paluſtre*, ſmallage. See the article Smallage.

APOCALYPSE, revelation, the laſt of the ſacred books of the New Teſtament, containing revelations concerning ſeveral important doctrines of Chriſtianity.

This book, according to Irenæus, was written about the year 96 of Chriſt, in the iſland of Patmos, whither St. John had been baniſhed by the emperor Domitian. But Sir Iſaac Newton, with very good reaſon, places the writing this book earlier, viz. in the time of Nero. Some attribute this book to the arch-heretic Cerinthus: but the ancients unanimouſly aſcribed it to John, the ſon of Zebedee, and brother of James. This book has not, at all times, been eſteemed canonical. There were many churches in Greece, as St. Jerom informs us, which did not receive it; neither is it in the catalogue of canonical books prepared by the council of Laodicea, nor in that of St. Cyril of Jeruſalem; but Juſtin, Irenæus, Origin, Cyprian, Clemens of Alexandria, Tertullian, and all the fathers of the fourth, fifth, and the following centuries, quote the Revelations as a book then acknowledged to be canonical. The Alogians, Marcionites, Cerdonians, and Luther himſelf, rejected this book: but the Proteſtants have forſaken Luther in this particular; and Beza has ſtrongly maintained againſt his objections, that the Apocalypſe is authentic and canonical. The apocalypſe of John is written in the ſame ſtile and language with the propheſies of Daniel, and hath the ſame relation to them which they have to one another; ſo that all of them together make but one conſiſtent prophecy, pointing out the various revolutions that ſhould happen, both to the church and to the ſtate; and, at length, the final deſtruction and downfal of the Roman empire. *Newton on Prophecies.*

APOCOPE, among grammarians, a figure which cuts off a letter or ſyllable from the end of a word; as *ingeni* for *ingenii*.

APOCRYPHA, or **APOCRYPHAL** *Books*, ſuch as are not admitted into the canon of Scripture, being either not acknowledged as divine, or ſpurious. When the Jews publiſhed their ſacred books, they only gave the appellations of canonical and divine to ſuch as they then made public; and ſuch as were ſtill retained in their archives they called apocryphal, for no other reaſon, but becauſe they were not public; ſo that they might be really ſacred and divine, though not promulged as ſuch.

The proteſtants do not only reckon thoſe books to be apocryphal which are eſteemed ſuch in the church of Rome, as the prayer of Manaſſeh king of Judah, the third and fourth book of Eſdras, St. Barnabas's epiſtle, the book of Hermos, the addition at the end of Job, and the 151ſt Pſalm; but alſo Tobit, Judith, Eſther, the book of Wiſdom, Jeſus the Son of Sirach, Baruch the prophet, the Song of the Three Children, the hiſtory of Suſanna, the hiſtory of Bell and the Dragon, and the firſt and ſecond book of Maccabees. It is not pretended that theſe books were received by the Jews, or ſo much as known to them. None of the writers of the New Teſtament cite or mention them: neither Philo nor Joſephus ſpeak of them. The Chriſtian church was for ſome ages an utter ſtranger to theſe books. Origin, Athanaſius, Hilary, Cyril of Jeruſalem, and all the orthodox writers, who have given catalogues of the canonical books of Scripture, unanimouſly concur in rejecting theſe out of the canon. And for the New Teſtament they are divided in their opinions, whether the Epiſtle to the Hebrews, the Epiſtle of St. James, and the ſecond Epiſtle of St. Peter, the ſecond and third Epiſtles of St. John, the Epiſtle of St. Jude, and the Revelations, are to be acknowledged as canonical or not. The proteſtants acknowledge ſuch books of Scripture only to be canonical as were ſo eſteemed to be in the firſt ages of the church. The ſeveral epiſtles abovementioned, and the book of Revelations, whatever the ſentiments of ſome particular perſons are or may have been of them, are allowed by all the the reformed churches to be parts of the canon of the New Teſtament.

APOCYNUM, dogs-bane, in botany, a genus of plants, the leaves of which are produced oppoſite by pairs upon the branches: the flower conſiſts of one leaf, which is cut into ſeveral ſegments; from its flower-cup ariſes the pointal, which is fixed like a nail in the back part of the flower, and is afterwards changed into a fruit, which is, for the moſt part, compoſed of two capſules, or pods, which open from the baſe to the top, incloſing many ſeeds, and have a long pappous down adhering to them: to this may be added, that the whole plant abounds with a milky juice. There are ſeveral ſorts of this plant cultivated in the curious gardens of plants, ſome of which are very beautiful, and deſerve a place in every good garden. *Miller's Dict.*

APODETYRIUM, in the ancient baths, the apartment where perſons dreſſed and undreſſed.

APOGEE, *Apogæum*, in aſtronomy, that point in the orbit of a planet, which is at the greateſt diſtance from the earth. The apogee of the ſun is that point of the earth's orbit which is at the greateſt diſtance from the ſun; and conſequently the ſun's apogee, and the earth's aphelion, are one and the ſame point. The quantity of the motion of the apogee may be found by comparing two obſervations thereof made at a great diſtance of time, converting the difference into minutes, and dividing it by the number of years elapſed between the two obſervations. The quotient gives the annual motion of the apogee. Thus, from an obſervation made by Hipparchus, in the year before Chriſt, 140, whereby the ſun's apogee was found 5°, 30', of Gemini; and another made by Ricciolus, in the year of Chriſt, 1646, wherein it was found 7°, 26', of Cancer; the annual motion of the apogee is found to be 1', 4". De la Hire, in Tab. Aſtron. p. 15, makes the apogee of the ſun to be in 8°, 7', 30", of 20, and its annual motion 1', 2".

APOGEE *of the Equant* is its fartheſt diſtance from the earth, or that point where the circumference of the the equant is interſected by the line of the apſides, in the remoteſt part of the diameter.

The mean apogee of the epicycle is a point where the epicycle is cut above, by a right line drawn from its center, to the center of the equant, or the point of the epicycle moſt remote from the earth.

* APOLLO, in heathen mythology, the God of Light, Medicine, Verſe, and Prophecy. According to Tully there were four deities of this name; the firſt was the ſon of Vulcan, and the tutelar God of the Athenians; the ſecond born in Crete; the third an Arcadian; and the laſt, to whom the greateſt honour is aſcribed, the ſon of Jupiter and Latona. This deity was ſo ſkilled in the uſe of the bow, that his arrows were always fatal. Python and the Cyclops experienced their force; for Apollo being enraged at Jupiter's killing his ſon Æſculapius, revenged himſelf on the Cyclops who had forged the thunderbolts for the father of the Gods, on which he was baniſhed from heaven, and forced to hire himſelf as a ſhepherd to Admetus, king of Theſſaly, when he invented the lyre, and became diſtinguiſhed for his ſkill in muſic, on which account the Muſes were under his immediate protection, and the graſhopper was conſecrated to him on account of its harmony. In the character of the ſun he was repreſented in a chariot, drawn by four horſes; each night he went to repoſe with Thetis in the Ocean, and in the morning the Hours got ready his horſes, and unbarred the gates of light. He reſembled his father Jupiter in his propenſity to love, and ſpent ſome time with Venus in the Iſle of Rhodes, when the ſky rained gold, and the earth was covered with lilies and roſes.

He had a great number of names; he was called Phœbus, on account of his ſplendor; Pæon, from his killing the python: Nomius and Agræus, from his feeding of cattle, and making laws; and Delius, either from his revealing things concealed, or his being born at Delos; and at Rome he was called Sol or the Sun. The ſacrifices uſually offered to Apollo were lambs, bulls, and oxen. The animals ſacred to this God were the wolf, from its acuteneſs of ſight; the cock, from his foretelling his riſing; the hawk, from its boldneſs of flight; the crow, from her augury; the ſwan, from her divining her own death; and the graſhopper, on account of its muſic. Of trees, the olive, laurel, palm, and juniper, were moſt in eſteem with him.

APOLOGUE, an ingenious method of conveying inſtruction, by a feigned relation, called a moral fable. The only difference between a parable and an apologue, conſiſts in this, that the former being drawn from what paſſes among mankind, requires probability in the narration; whereas the apologue being generally taken from the ſuppoſed actions of brutes, or even things inanimate, is not confined by ſuch ſtrict rules of probability.

APOLOGY, a defence or excuſe for ſome perſon, action, or the like, either by words or writing.

APONEUROSIS, in anatomy, the ſpreading or expanſion of a nerve or tendon, in the manner of a membrane.

APOPHYGE, in architecture, the convex part, or ring, of a column, lying either above or below the flat member. It was originally nothing more than the ferril or ring, fixed on the extremity of a wooden pillar to prevent its ſplitting; and was afterwards imitated in ſtone.

APOPLECTIC, ſomething that relates, or belongs to, an apoplexy.

APOPLEXY, among phyſicians, any diſorder which inſtantaneouſly deprives a man of life, who a few minutes before was, or at leaſt ſeemed to be, in perfect health; but it is uſually confined to ſuch ſudden diſorders cauſed by affections of the brain. The word is derived from the Greek, to ſtrike ſuddenly.

In an apoplexy ſays Boerhave, the patient is ſuddenly deprived of the exerciſe of all the ſenſes, both external and internal, and of voluntary motion, whilſt the pulſe, which is generally ſtrong, remains, together with a laborious and deep reſpiration, attended with a conſiderable elevation of the breaſt, with a ſtertor, and the appearance of profound and perpetual ſleep. A multitude of the moſt accurate obſervations have made it appear, that this diſorder ariſes from whatever cauſe is capable of preventing, either totally or in part, the influx of the nervous fluid, ſecreted, in the cerebrum, to the organs of ſenſe and voluntary motion, and the reflux of the ſame fluid from the above-mentioned organs to the common ſenſory in the brain; whilſt the progreſs, and perhaps the return, of the fluid, ſupplied by the cerebellum, to and from the heart, and organs of reſpiration, is preſerved in a degree ſufficient to ſuppott, in ſome meaſure, their functions.

All theſe cauſes, as obſerved and delivered by authors, may, for the greater perſpicuity, be reduced to claſſes; in the firſt of which may be reckoned,

1. The natural make of the body: thus, when the head is naturally large, the neck ſhort, and, as it ſometimes happens, conſiſting only of ſix vertebræ, whereas there ought to be ſeven, this ſtructure diſpoſes to an apoplexy, as it favours the congeſtion of blood and humours in the head. Thus alſo, if the body is corpulent and fat, the capillary arteries in general will be ſubject to compreſſion; and, in conſequence thereof, a greater quantity of blood and humours will flow into the veſſels which convey them to the brain. Thus alſo a plethoric habit, and a redundance of pituitous humours in the blood, lay a foundation for the ſtagnation of the juices, and a ſubſequent rupture of the veſſels in the brain.

2. To the ſecond claſs belong all thoſe cauſes which induce ſuch a change in the blood, lymph, and nervous fluid, as to render them incapable of circulating freely through their reſpective veſſels in the brain. Amongſt theſe are,

Polypous concretions in the carotid or vertebral arteries, whether formed originally about the heart, or within the cranium; which are diſcovered by a palpitation of the heart, an unequal pulſe, a vertigo, and temporary loſs of ſight, often recurring, and which are increaſed by motion or heat.

3. To the third claſs belongs whatever compreſſes the arteries themſelves, or the nervous veſſels of the brain, ſo as to prevent a free circulation of their reſpective fluids through them.

People who are plethoric, that is, full of blood, and bloated with bad humours, are much ſubject to this ſpecies of apoplexy; eſpecially if extraordinary motion or heat increaſe the velocity of the circulation. Hence it is apparent that the diſorder muſt be promoted in ſuch conſtitutions by high feeding and ſpirituous liquors; medicines which are acrid, and excite the motion of the blood, ſuch as cardiacs, volatiles, and emetics; by exceſſive heat and motion; and by intenſeneſs of thought, eſpecially if long continued, and frequently repeated, becauſe this determines a more copious flux of humours towards the brain.

4. To the fourth claſs belongs all thoſe cauſes, which, by any means, ſo diſſolve the texture of the arteries, veins, or lymphatic ducts, belonging to the internal part of the cerebrum, as to cauſe an extravaſation of their reſpective fluids, which then preſs upon, and injure the medullary origin of the nerves of the cerebrum. Such, for example, are an acrimonious ſerum in hydropic and leucophlegmatic caſes; a redundance of blood in a plethora; an atrabiliarious acrimony prevalent in melancholy, ſcorbutic, and arthritic conſtitutions, which frequently produces an apoplexy, and uſually operates betwixt the fortieth and ſixtieth years of life. Now, all theſe may remain latent in the conſtitution for ſome time; but, upon being excited by adequate cauſes, they are frequently productive of a ſudden apoplexy; which may be foreſeen by comparing the materials ſubſiſting in the conſtitution with the cauſes capable of exciting them to action, which are principally violent affections of the mind, and intenſe ſtudies: to which, perhaps, imprudent and exceſſive venery may be added.

5. Some ſorts of poiſons, which are ſuddenly deleterious, may be ranked in the fifth claſs; but theſe may be either reduced to the ſecond, third, or fourth; or may be more properly ſaid to act upon the lungs than the brain. Amongſt theſe are the fumes or mineral ſulphurs, of charcoal, and that gas ſylveſtris, or incoercible ſpirit, which exhales from vegetable juices during fermentation.

The anatomical inſpection of bodies which have died of apoplexies, and the hiſtorical obſervation of ſuch circumſtances as occur in the treatment of ſuch caſes, furniſh us with a knowledge of theſe cauſes; and a due reflection upon theſe naturally leads us to a diſtribution of them into the preceding claſſes, which are admirably adapted to the inveſtigation of the beſt methods of cure.

As to the cure and prevention of an apoplexy, no univerſal rules can be laid down; for as the prediſpoſing and exciting cauſes, together with the parts principally affected, are various, the method of relief muſt alſo vary; and muſt be attempted before the diſorder grows inveterate, otherwiſe it will be difficult to do it with ſucceſs.

If, therefore, an apoplexy, from a glutinous, inert cold cauſe, is foreſeen from the ſigns above ſpecified, the intentions muſt be directed, firſt, to avert the preſſure of the glutinous juices from the head.

Secondly, to attenuate the glutinous viſcidity in the brain, and in the whole habit.

The preſſure on the veſſels of the brain are to be diminiſhed,

Firſt, by a derivation of the humours to other, and theſe oppoſite parts.

Secondly, by univerſal evacuations.

A derivation of the humours is effected by vapours, fomentations, and baths, applied to particular parts, by which it is intended the humours ſhould be invited, by ſuction with cupping-glaſſes, by ſinapiſms and veſicatories, among which cantharides are of great importance, as they both invite the humours to the part where they are applied, and attenuate at the ſame time, by cauſtics, iſſues, ſetons, and frictions; by ligatures made upon the large veins of the feet, legs, and thighs. To theſe may be added colluſions, gargariſms, and maſticatories, which excite a diſcharge of ſaliva, and apophlegmatiſms applied to the mouth, fauces, and noſe. *Boerhaave.*

APOSTACY, the act of abandoning the true religion.

APOSTHUME, in ſurgery. See ABSCESS.

APOSTLE, a meſſenger ſent on a buſineſs of importance; and hence the word is applied by way of eminence to imply one of the twelve diſciples commiſſioned by Chriſt to preach the goſpel. There are various conjectures with regard to the reaſon which induced our Saviour to make choice of twelve apoſtles; but the moſt probable is, that he did it in alluſion to the twelve patriarchs, as the founders of their ſeveral tribes; or to the twelve chief heads or rulers of thoſe tribes, of which the body of the Jewiſh nation conſiſted.

APOSTOLIC, or APOSTOLICAL, ſomething connected with, or derived from the apoſtles.

APOSTROPHE, in rhetoric, a figure by which the orator, in a vehement commotion, turns himſelf on all ſides, and applies himſelf to the living and the dead; to angels and to men; to inanimate objects, rocks, groves, ſtreams, &c. Thus Adam, in Milton's Paradiſe Loſt,

O woods, O fountains, hillocks, dales, and bow'rs,
With other echo, &c.

APOSTROPHE, in grammar, a mark placed over a letter to ſhew that a vowel is cut off; as heav'n for heaven, &c.

APOTHECARY, one who practiſes the art of pharmacy. There are, in this profeſſion, various degrees, as to employ and extent. Some do little more than make up medicines, according to the preſcription of the Diſpenſatory (compiled by the order of the College of Phyſicians, for their direction) and of thoſe of particular phyſicians, beſides viſiting their patients. Others not only prepare almoſt all kinds of medicines, as well galenical as chemical, but likewiſe deal in drugs, with all which they ſupply their brethren in trade; and ſo become a ſort of wholeſale dealers, as well as apothecaries. Others again, practiſe ſurgery, manmidwifery, and many times even officiate as phyſicians, eſpecially in the country; and often become men of very large practice, and eminent in their way. A youth intended for this profeſſion ſhould be a pretty good ſcholar, and have a tolerable knowledge in the Latin tongue at leaſt, that he may be the better able, in due time, to read ſome of the beſt authors who have wrote upon the ſubjects of botany, pharmacy, anatomy, and medicine; though it muſt be owned there are, at preſent, almoſt innumerable helps in our mother-tongue.

In London, they are one of the city companies, and were firſt incorporated with the grocers in the 1606, in the reign of king James I. but not alone till 1617. They have a hall where there are two fine elaboratories, out of which all the ſurgeons cheſts are ſupplied with medicines for the uſe of the Britiſh navy.

In the year 1712, the 10th of queen Anne, an act paſſed for reviving and continuing ſeveral acts therein mentioned, one whereof was for exempting the apothecaries from ſerving the offices of conſtables and ſcavengers, and other pariſh and ward offices, and from ſerving upon juries; which act was made perpetual in the 9th year of king George the Iſt. The apothecaries in England are obliged to make up their medicines according to the formulas preſcribed in the Diſpenſatory of the College of Phyſicians, and are under an obligation to have medicines there enumerated always ready in their ſhops; and their ſhops are liable to be viſited by the cenſors of the college, who have it in their power to deſtroy ſuch medicines as they judge not to be good.

By a regulation of the 15th of October, 1631, all the apothecaries of Paris are prohibited to give any medicine to the patients, unleſs by the order, and with the advice of a regular bred phyſician, or of a perſon of the faculty; nor are they to make up any preſcription given or drawn up by any empiric.

Among the good regulations made in Denmark, that which the apothecaries are obliged to obſerve is reckoned one of the beſt; for no perſon can have leave to follow that profeſſion, unleſs he be approved of by the college of phyſicians, and confirmed by the king himſelf. There are but two apothecaries allowed for the city of Copenhagen, and but one in every other conſiderable town. The magiſtrates, attended by the doctors of phyſic, viſit their ſhops and drugs twice or thrice a year, and thoſe drugs that are either ſtale or bad are ſeized, and publickly thrown upon a dung-hill without the city; and this is a ſtain upon the character of ſuch apothecary, that is hardly ever wiped off. The price of all drugs is fixed, ſo that one may, without fear of being impoſed upon, ſend child for any drug to an apotheca even a ry's ſhop, where nothing is ſold but what is very good, and at a reaſonable price. All drugs are ſold for ready money, and yet the apothecaries are obliged to regiſter in a book what they ſell, to whom, and by what phyſician's preſcription: ſo that there ſeldom happens any accident by poiſon, either accidentally, or with deſign; and if any ſuch thing happens, it is eaſily found out, and quickly puniſhed.

It is looked upon as a diſgrace to England, that ſuch numbers of quacks, or empirics, ſhould be permitted to enrich themſelves by deſtroying annually many thouſands of his Majeſty's ſubjects; and it is ſtill more diſgraceful that many of theſe wretches who murder with impunity, have obtained the king's royal patent for an excluſive privilege of deſtroying the human ſpecies. It is with concern I ſay it, but there are many in London, authorized by patent to ſell their noſtrums, who have been bred porters, or to the moſt ſervile trades and employments; but if they can ſcrape together the ſum of ſeventy pounds to pay the fees of office, a patent is granted of courſe; by the help of which, and a pompous advertiſement, which the patentee himſelf cannot underſtand, their poiſon is diſtributed over his Majeſty's three kingdoms. Is it not amazing that the legiſlature does not take this matter into conſideration?

APOTHEOSIS, in antiquity, a heathen ceremony, whereby their emperors and great men were placed among the gods. It was one of the doctrines of Pythagoras, which he had borrowed from the Chaldees, that virtuous perſons, after their death, were raiſed into the order of the gods. And hence the ancients deified all the inventors of things uſeful to mankind, and who had done any important ſervice to the commonwealth. Tiberius propoſed to the Roman ſenate the apotheoſis of Jeſus Chriſt, as is related by Euſebius, Tertullian, and St. Chryſoſtom. Juvenal rallying the frequent apotheoſis, introduces poor Atlas complaining that he was ready to ſink under the prodigious burthen of ſo many new gods as were almoſt every day added to the heavens.

APOTOME, in mathematics, the remainder or difference of two incommenſurable quantities. The word is derived from the Greek.

The doctrine of apotomes is a very uſeful ſubject; it ſerves to ſhew the poſſibility or impoſſibility of the quadratures of curved-line figures, and illuſtrates the lineal ſolutions of Diophantus's problems, and others of the like kind. Euclid, in his Elements, makes uſe of this method to ſhew the nature of the five regular bodies, which by Plato and his ſect (of which Euclid's was one) were held in great eſteem.

APPARATUS, a term uſed to ſignify a complete ſet of inſtruments, or other utenſils, belonging to any artiſt or machine: thus we ſay a ſurgeon's apparatus, a chemiſt's apparatus: the apparatus of the air-pump, microſcope, &c.

APPARENT, in a general ſenſe, whatever is evident to the eye or underſtanding.

APPARENT *Conjunction*, in aſtronomy, is, when the right line connecting the centers of two planets, &c. does not paſs through the center of the earth, but through the eye of a ſpectator ſituated on its ſurface.

APPARENT, or *ſenſible Horizon*, is that great circle which limits our ſight, or the place where the heavens and the earth ſeem to meet.

APPARENT *Magnitude* of an object, the magnitude thereof, as it appears to the eye. The apparent or ſeeming magnitude is meaſured by the optic angle. All things appear the leſs, the more remote they are; and it is found by experience, when their diſtance becomes ſo great that the apparent magnitude is no more than an angle of one ſecond, they will be ſo ſmall as to appear but like a point, and become inviſible.

APPARENT *Diameter*, in aſtronomy, is the angle under which we ſee the ſun, moon and ſtars.

The beſt way of finding the apparent diameters of the celeſtial luminaries is by a micrometer fixed in the focus of a teleſcope.

The apparent diameter of the ſun may be obtained by taking the meridian altitudes of his upper and lower limbs with a good quadrant and teleſcope fitted to it, and afterwards taking their difference, which will be his apparent diameter ſeen from the earth. The apparent diameter of the ſun is obſerved to be leaſt when he is in Cancer, and greateſt when in Capricorn. In the moon there is a two-fold increaſe and decreaſe of the apparent diameter, one when ſhe is in conjunction with the ſun, and the other when in her quadratures.

The greateſt apparent diameter of the ſun, according to Caſſini, is 32′, 10″, and the leaſt 31″, 38″——According to De la Hire, the greateſt is 32′, 43″, and the leaſt 31′, 38″.——The greateſt apparent diameter of the moon, according to Kepler, is 32′, 44″, and the leaſt 30′, 00″. And according to De la Hire, the one is 33′, 30″, and the other 29′, 30″. See the articles Sun and Moon.

The apparent diameter of Saturn's ring, according to Huygens, is 1′, 8″, when leaſt.

The apparent diameters of the other planets ſee under the article Diameter.

APPARENT *Diſtance*, that diſtance we judge an object to be from us when ſeen afar off, being generally very different from the true diſtance.

APPARENT *Place of any Object*, in optics, that wherein it appears when ſeen through one or more glaſſes. See Lens.

APPARENT *Place of the Image of an Object*, in catoptrics, that which the image of an object, made by the reflection of a ſpeculum, appears to be in.

APPARENT *Place of a Planet*, in aſtronomy, that point upon the ſurface of the ſphere where we ſee the center of the ſun, moon, or ſtars, from the ſurface of the earth.

APPARITION, in a general ſenſe, implies ſimply the appearance of any object.

APPARITION, in aſtronomy, ſignifies a ſtar, or other heavenly object becoming viſible, which before was below the horizon.

Circle of perpetual APPARITION, in aſtronomy, a great circle of the ſphere, whoſe plane is perpendicular to a right line drawn from the center of the ſun to that of the earth; this circle is the boundary of the enlightened hemiſphere of the earth, in the different points of its orbit.

Circle of perpetual APPARITION, in geography, a ſmall circle of the ſphere diſcribed about the pole as a center, and touching the northern point of the horizon in north latitude, and the ſouth point in ſouth latitude. All ſtars included in this circle never ſet, but are always viſible above the horizon.

APPARITOR, among the Romans, a general term to comprehend all attendants of judges and magiſtrates appointed to receive and execute their orders. Apparitor, with us, is a meſſenger that ſerves the proceſs of a ſpiritual court, or a beadle in an univerſity, who carries the mace.

APPEAL, in law, the removal of a cauſe from an inferior to a ſuperior court or judge, when a perſon thinks himſelf aggrieved by the ſentence of the inferior judge. Appeals lie from all the ordinary courts of juſtice to the houſe of lords.

APPEAL, in common law, is taken for the accuſation of a murderer by a perſon who had intereſt in the party killed, or of a felon by an accomplice. It is proſecuted either by writ or by bill: by writ, when a writ is purchaſed out of the chancery by one perſon againſt another, commanding him to appeal to ſome third perſon of felony, and to find pledges for doing it effectually; by bill, when the perſon himſelf gives in his accuſation in writing, offering to undergo the burden of appealing the perſon therein named.

APPEARANCE in a general ſenſe, the exterior ſurface of a thing, what immediately ſtrikes the ſenſes.

APPEARANCE, in law, ſignifies a defendant's filing a common or ſpecial bill, or any proceſs iſſued out of a court of judicature. In actions by original, appearances are entered with the filazer of the county; and by bill, with the prothonotary.

In perſpective, appearance is the projection of a figure or body on the perſpective plane. In optics, direct appearance is the ſight of any object by direct rays, without refraction or reflection.

APPELLANT, in a general ſenſe, one who appeals. See the article APPEAL.

APPELLATIVE, in grammar, a noun which is applicable to a whole ſpecies or kind, as man, horſe, fiſh, in contradiſtinction to a proper noun. See NOUN.

APPELLEE, among lawyers, the perſon againſt whom an appeal is brought See APPEAL.

APPENDANT, in law, any thing that is inheritable belonging to ſome more worthy inheritance, as an advowſon, common, or court, may be appendant to a manor, land to an office, &c. but land cannot be appendant to land, for both are corporeal inheritances, and one thing corporeal cannot be appendant to another.

APPENDIX, a treatiſe added at the end of a work to render it more complete. See SUPPLEMENT.

* APPENINES, a large chain of mountains, commonly conſidered as a branch of the Alps. It runs along Italy throughout its whole length, even as far as the moſt ſouthern part of Naples.

APPETITE, *Appetitus*, in a general ſenſe, the deſire of enjoying ſome object, ſuppoſed to be conducive to our happineſs.

APPETITE, in medicine, a certain painful or uneaſy ſenſation, always accompanied with a deſire to eat or drink. An exceſſive appetite is called by phyſicians bulimy, or fames canina; a defect or loſs of it, anorexy; and that after things improper for food, pica. See BULIMY, ANOREXY, &c.

APPLE, a well known fruit, of a roundiſh figure, of conſiderable uſe both as a food, a remedy, and likewiſe yielding cyder.

All ſorts of apples, ſays Mr. Miller, are propagated by grafting or budding upon the ſtocks of the ſame kind; for they will not take upon any other ſort of fruit-tree. In the nurſeries there are three ſorts of ſtocks generally uſed to graft apples upon: the firſt are called free ſtocks; theſe are raiſed from the kernels of all ſorts of apples indifferently; and theſe are alſo termed crab-ſtocks; for all thoſe trees which are produced from the ſeeds before they are grafted, are termed crabs without any diſtinction: but, as I before obſerved, I ſhould always prefer ſuch ſtocks as are raiſed from the kernels of crabs, where they are preſſed from verjuice; and I find ſeveral of the old writers on this ſubject of the ſame mind. Mr. Auſtin, who wrote an hundred years ago, ſays the ſtock which he accounts beſt for apple grafts, is the crab; which is better than ſweeter apples, and will make fruits more ſtrong and hardy to endure froſts; and it is very certain, that, by frequently grafting ſome ſorts of apples upon free ſtocks, the fruits have been rendered leſs firm and poignant, and of a ſhorter duration.

The ſecond ſort of ſtock is the Dutch creeper: theſe are deſigned to ſtint the growth of the trees, and keep them within compaſs for dwarfs or eſpaliers.

The third ſort is the paradiſe apple, which is a very low ſhrub, ſo only proper for trees which are kept in pots by way of curioſity; for theſe do not continue long.

Some perſons have made uſe of codlin-ſtocks for grafting of apples, in order to ſtint their growth: but as theſe are commonly propagated by ſuckers, I would by no means adviſe the uſe of them ; nor would I chooſe to raiſe the codlin-trees from ſuckers, but rather graft them upon crab-ſtocks ; which will cauſe the fruit to be finer, laſt longer, and have a ſharper flavour : and theſe trees will laſt much longer ſound, and never put out ſuckers, as the codlins always do ; which, if not conſtantly taken off, will weaken the trees, and cauſe them to canker ; and it is not only from the root, but from the knots of their ſtems there are generally great number of ſtrong ſhoots produced, which fill the tree with uſeleſs ſhoots, and render them unſightly, and the fruit ſmall and crumpled.

The method of raiſing ſtocks from the kernels of crabs or apples is, to procure them where they are preſſed for verjuice or cyder ; and after they are cleared of the pulp, they may be ſown upon a bed of light earth, covering them over about half an inch thick with the ſame light earth : theſe may be ſown in November or December, where the ground is dry ; but in wet ground, it will be better to defer it till February ; but then the ſeeds ſhould be preſerved in dry ſand, and kept out of the reach of vermin ; for if mice or rats can get to them, they will devour the ſeeds : there ſhould alſo be care taken of the ſeeds when they are ſown, to protect them from theſe vermin, by ſetting of traps to take them, &c. In the ſpring, when the plants begin to appear, they muſt be carefully weeded ; and if the ſeaſon ſhould prove dry, it will be of great ſervice to water them two or three times a week ; and, during the ſummer, they muſt be conſtantly kept clear from weeds ; which, if ſuffered to grow, will ſoon over-top the plants, and ſpoil their growth . if theſe thrive well, they will be fit to tranſplant into the nurſery the October following ; at which time the ground ſhould be carefully digged, and cleanſed from the roots of all bad weeds : then the ſtocks ſhould be planted in rows three feet aſunder, and the plants one foot diſtance in the rows, cloſing the earth pretty faſt to their roots : when the ſtocks are tranſplanted out of the ſeed-bed, the firſt autumn after ſowing, they need not be headed : but, where they are inclined to ſhoot downward, the top-root muſt be ſhortened, in order to force out horizontal roots. If the ground is pretty good in which the ſtocks are planted, and the weeds conſtantly cleared away, the ſtocks will make great progreſs ; ſo that thoſe which are intended for dwarfs, may be grafted the ſpring twelvemonth after they are planted out of the ſeed-beds : but thoſe which are deſigned for ſtandards will require two years more growth, before they will be fit to graft ; by which time they will be upwards of ſix feet high. The other neceſſary work to be obſerved in the culture of theſe trees, while they remain in the nurſery, will be enumerated under that article. See NURSERY. *Miller's Gard. Dict.*

APPLICATION, in a general ſenſe, the laying two things together, in order to diſcover their agreement.

APPLICATION *of one Science to another*, ſignifies the uſe we make of applying the principles and truths belonging to one ſcience, to complete or advance another.

APPLICATION *of Algebra to Geometry*, implies the ſolving geometrical problems by the aſſiſtance of algebra.

As the line, the ſurface, and the ſolid, objects of geometry are commenſurable magnitudes, it is very natural to think that, as algebra and analyſis were wholly employed in the calculation of magnitude, and diſcovering unknown quantities from proper data, they might be applied with very great advantage to geometry. But however natural and eaſy this application may appear, Des Cartes was the firſt that ever knew it, though algebra had been very greatly improved by ſeveral perſons, eſpecially Vieta. Des Cartes firſt taught us to expreſs the nature of curves by equations, to reſolve geometrical problems by theſe curves, and, in ſhort, to demonſtrate theorems in geometry by the help of algebraical calculation, when it would be too laborious to demonſtrate them by the common methods. See the articles CURVE and *Conſtruction of* EQUATION.

APPLICATION *of Geometry to Algebra.*---The application of geometry to algebra is not ſo common as the application of algebra to geometry, but ſometimes takes place : for as we repreſent geometrical lines by equation, ſo we may repreſent numerical quantities, expreſſed by algebraical ſymbols, by geometrical lines ; and by this means ſometimes diſcover a more eaſy method of demonſtration and ſolution.

APPLICATION *of Geometry and Algebra to Mechanics.*---This is founded on the ſame principles as the application of algebra to geometry. It conſiſts chiefly in repreſenting the curves which bodies deſcribe in their motion by equations, in determining the equation between the ſpaces which bodies generate, (when acted upon by any powers whatever) and the time they take to paſs through theſe ſpaces, &c. We cannot indeed compare two things of a different nature together, ſuch as ſpace and time; but we may compare the proportion of time with the parts of ſpace paſſed over. Time in its nature flows uniformly, and mechanics imply the ſame uniformity.

APPLICATION *of Geometry and Algebra to Phyſics.*---This we owe to Sir Iſaac Newton, as we owe the application of algebra to geomety to Des Cartes, and it is founded on the ſame principles. The properties of bodies in general have between each other certain proportions, which we may compare with each other, more or leſs diſtinguiſhable; and theſe we can diſcover by geometry or algebra. On this are founded all the phyſico-mathematical ſciences. One ſingle obſervation or experiment often demonſtrates a whole ſcience. As for example: The bare knowledge of this, that the angle of incidence is equal to the angle of reflection, which is known to be true, contains the whole ſcience of catoptrics. This principle of the equality of angles being once admitted, catoptrics becomes a ſcience purely geometrical, becauſe it is reduced to comparing angles with given lines of poſition. The thing is the ſame in many other caſes. By the help of geometry and algebra, we can in general determine the power of one effect, which depends on another better known. This ſcience, therefore, is almoſt always neceſſary to compare and examine the facts experiments diſcover to us. It muſt be owned, however, that every ſubject of phyſics is not equally capable of the application of geometry. Several experiments admit of no calculation at all; ſuch are thoſe of the magnet, electricity, and many others; in theſe caſes we muſt forbear applying to it.

APPLICATION *of one Thing to another* is a term made uſe of to denote the ſervice the firſt is of to underſtand or bring the ſecond to perfection. Thus the application of the cycloid to pendulums ſignifies the uſe made of the cycloid to bring pendulums to perfection.

APPRAISING, the act of valuing or ſetting a price upon goods, &c.

APPREHENSION, in logic, the firſt or moſt ſimple act of the mind, whereby it perceives or is conſcious of ſome idea. See the article Perception.

APPREHENSION, in law, the ſeizing a criminal in order to bring him to juſtice.

APPRENTICE, a young perſon bound by indenture to ſome tradeſman, in order to be inſtructed in his myſtery or trade.

APPROACH, the acceding or advancing of two objects towards each other.

APPROACHES, in fortification, the works thrown up by beſiegers, in order to get nearer a fortreſs without being expoſed to the fire of the enemy's cannon; ſuch in particular are the trenches carried on in a zigzag form, connected by parallels or lines of communication. See Attack.

APPROPRIATION, the annexing a benefice to the proper and perpetual uſe of a religious houſe, biſhopric, college, &c.

APPROXIMATION, in arithmetic and algebra, the method of approaching ſtill nearer to the quantity ſought, without a poſſibility of finding it exactly.

For the ſeveral methods of approximation, ſee Extraction, Equation, Circle, Series, &c.

APPULSE, in aſtronomy, the approach of a planet towards a conjunction with the ſun, or any of the fixed ſtars.

APPURTENANCES, in common law, things belonging to another thing as principal: as hamlets, fiſheries, &c. to a manor; ſeats in a church; to houſes, &c.

APRICOT-TREE, *Armeniaca Malus*, in gardening and botany, a fruit-bearing tree, with roundiſh acuminated leaves, ſerrated on the edges, and four or five of them placed together. There are, ſays Mr. Miller, ſeven ſorts cultivated in the Engliſh gardens, which are: 1. The maſculine apricot; that is the ſooneſt ripe of all, and has a ſmall roundiſh fruit, of a red colour towards the ſun, which as it ripens fades to a greeniſh yellow on the other ſide. It is only valuable for being ſooneſt ripe; for it has little flavour. 2. The orange apricot, which is the next that becomes ripe, and is of a deep yellow colour. The fleſh is dry, and is better for tarts than for eating. 3. The Algier apricot ripens next, and is of an oval ſhape, only a little compreſſed on the ſides. It turns to a pale yellow or ſtraw colour, when the fleſh is dry, with a faintiſh taſte. 4. The Roman is next, and is larger than the Algier, but not compreſſed on the ſides; the colour is deeper, and the fleſh is moiſter. 5. The Turkey apricot is the next in order, becauſe it ripens later than the former, and is bigger than any of them, and has a globular ſhape. It is of a deeper colour, has a firmer fleſh and a better taſte. 6. The Breda apricot was brought originally from Africa, and is a large roundiſh fruit, turning to a deep yellow when ripe, and is of a deep orange colour on the inſide. The fleſh is ſoft, full of juice, and better taſted than any of the whole tribe. 7. The Bruſſels apricot is the lateſt, and is not ripe till near the middle of Auguſt, unleſs expoſed to a ſouth ſun; however, too much heat ſpoils the taſte. It is red on the ſide next the ſun, with many dark ſpots, and of a greeniſh yellow on the other ſide; the fleſh is firm, and of a high flavour, but it often cracks before it is ripe.

Moſt people train theſe trees up to ſtems of ſix or ſeven feet high, or breed them upon ſtocks of that height; but this is a bad practice, becauſe the higher the heads of theſe trees are, the more they are expoſed to the cutting winds in the ſpring, which too frequently deſtroy the bloſſoms; and the fruit is alſo more liable to be blown down in ſummer, eſpecially if there ſhould happen to be much wind at the time they are ripe; which by falling from a great height, will be bruiſed and ſpoiled. Half ſtandards of about two feet and a half, or three feet in the ſtem, will better anſwer the intention; or they may be placed as dwarfs againſt an eſpalier, where, if they are ſkilfully managed, they will produce a large quantity of good fruit; and the trees in eſpalier may be more conveniently covered in ſpring, when the ſeaſon proves bad; whereby there will be a certainty of fruit every year.

Theſe fruits are all propagated by breeding them on plum-ſtocks, and will readily take upon almoſt any ſort of plum, except the Bruſſels, provided the ſtock be free and thriving.

Moſt of theſe trees are planted againſt walls, and ſhould have an eaſt or weſt aſpect; for if they are planted full ſouth, the great heat renders them mealy before they are well eatable. The borders under theſe walls ſhould be ſix feet wide at leaſt, and the earth about two feet, or two feet and a half deep.

If your ground be a wet cold loam or clay, you ſhould raiſe your borders as much above the level of the ſurface as it wil admit, laying ſome ſtones or rubbiſh in the bottom, to preſerve the roots from running downwards; but if you plant upon chalk or gravel, you muſt remove it to a conſiderable width, to make room for a good ſoil to be put in its place; though you need not go above two feet and a half deep at moſt.

The beſt ſoil for theſe and all other ſort of fruit trees is freſh untried earth from a paſture ground, taken about ten inches deep with the turf, and laid to rot and mellow at leaſt twelve months before it is uſed; and this muſt be kept often turned to ſweeten and imbibe the nitrous particles of the air.

When the former ſoil of the border is taken away, this freſh earth ſhould ſupply its place; and if the borders are filled with it two months before the trees are planted, the ground will be better ſettled, and not ſo liable to ſink after the trees are planted. In filling the borders, the ground ſhould be raiſed four or five inches above the level they are deſigned to allow for the ſettling.

Your borders being thus prepared, make choice of ſuch trees as are but one year's growth from budding; and if your ſoil be dry, or of a middling temper, you ſhould prefer October as the beſt ſeaſon for planting; but do not cut off any of the head at that time, unleſs there be any ſtrong fore-right ſhoots which will not come to the wall, and muſt therefore be taken away.

Your trees being thus prepared, mark out the diſtances they are to ſtand, which, in a good ſtrong ſoil, or againſt a low wall, ſhould be twenty feet or more; but if the wall be moderately high, eighteen feet is a reaſonable diſtance. Make a hole where each tree is to ſtand, and place the ſtem about four inches from the wall, inclining thereto: and after having fixed the tree in the ground, nail the branches to the wall, to prevent their ſhaking, and cover the ſurface of the ground round the roots with rotten dung to keep out the froſt. In this ſtate let it remain till February, when if the weather be good, you muſt unnail the branches of your trees, taking care not to diſturb the roots; and and being provided with a ſharp knife, put your foot cloſe to the ſtem of the tree, and having placed your left-hand to the bottom of the tree, to prevent its being diſturbed, with your right-hand cut off the head of the tree, to about four or five eyes above the bud, ſo that the ſloping ſide may be towards the wall.

In the ſpring, if the wheather proves dry, you muſt now and then give your trees a gentle refreſhing with water; in the doing of which, if you obſerve to water them with a roſe to the watering-pot, all over their heads, it will greatly help them; and alſo lay ſome turf or other mulch about the roots, to prevent their drying during the ſummer ſeaſon. As new branches are produced, obſerve to nail them to the wall in a horizontal poſition; and diſplace ſuch ſhoots as grow in a fore-right direction. This muſt be repeated as often as neceſſary, to prevent their hanging from the wall; but by no means ſtop any of their ſhoots in ſummer.

At Michaelmas, when the trees have done growing, you muſt unnail the branches, and ſhorten them in proportion to their ſtrength ; a vigorous branch may be left eight or nine inches long, but a weak one not above five or ſix : by this means no part of the wall will be left uncovered with bearing wood, which muſt be the caſe if the branches are left to a great length at firſt ; for it ſeldom happens that more buds than two or three ſhoot for branches ; and theſe are, for the moſt part, ſuch as are at the extreme part of the laſt year's wood : ſo that all the lower part of the ſhoots become naked, nor will they ever after produce ſhoots ; and this is the reaſon we ſee ſo many trees which have their bearing-wood ſituated only in the extreme part of tree.

When you have ſhortened the ſhoots, be ſure to nail them as horizontally as poſſible ; for upon this precaution the future good of the tree depends.

The ſecond ſummer obſerve, as in the firſt, to diſplace all fore-right ſhoots as they are produced, nailing in the other cloſe to the wall horizontally, ſo that the middle of the tree may be kept open ; and never ſhorten any of the ſhoots in ſummer, unleſs to furniſh branches to fill vacant places on the wall ; and never do this later than April. At Michaelmas ſhorten theſe ſhoots, as was directed for the firſt year ; the ſtrong ones may be left nine inches, and the weak ſix or ſeven at moſt.

The following year's management will be nearly the ſame with this ; but only obſerve, that apricots produce their bloſſome-buds, not only upon the laſt year's wood, but alſo upon the curzons, or ſpurs, which are produced from two years wood : great care ſhould therefore be taken in the ſummer-management, not to hurt or diſplace theſe. Obſerve alſo to ſhorten your branches at the winter-pruning, ſo as to furniſh freſh wood in every part of the tree ; and be ſure to cut out entirely all the luxuriant branches, or diſplace them as ſoon as they are produced ; becauſe if they were left to grow, they would exhauſt the nouriſhment from the bearing branches, which cannot be too ſtrong, provided they are kindly ; for the more vigorous your tree is, the more likely it will be to reſiſt the injuries of the weather : and trees are often brought to ſo weak a condition, as to produce only faint bloſſoms, and then moſt or all of the bearing branches will die. This misfortune, which is entirely owing to miſmanagement, is generally conſidered as the effect of a blight ; and perhaps moſt of the blights we complain of proceed from the ſame cauſe.

Theſe few rules well executed, together with a little obſervation and care, will be ſufficient ; for without diligent obſervation, there can be no ſuch thing as a ſkilful manager, be his inſtructions what they will.

The Bruſſels and Breda apricots, being for the moſt part planted for ſtandards, will require very little pruning or management ; only obſerve to take out all dead wood, or ſuch branches as croſs each other : this muſt be done early in autumn, or in the ſpring, after the cold weather is paſt, that the part where the inciſion is made may not canker. *Miller's Gardener's Dictionary.*

APRIL, in chronology, the fourth month of the year, containing thirty days. It is formed from the Latin *Aprilis*, which is derived from *aperio*, to open, becauſe the buds begin to open during this month.

APRON, in gunnery, that piece of lead which covers the touch-hole of a piece of ordnance.

APSIS, in aſtronomy, a term uſed indifferently of either of the two points of a planet's orbit, where it is at greateſt or leaſt diſtance from the ſun or earth ; and hence the line connecting thoſe points is called the line of the apſides. The apſis at the greateſt diſtance from the ſun is called the aphelion, and at the greateſt diſtance from the earth the apogee ; while that at the leaſt diſtance from the ſun is termed the periphelion, and at the leaſt diſtance from the earth, the perigee, &c.

APUS, or the bird of Paradiſe, in aſtronomy, a conſtellation in the ſouthern hemiſphere, not viſible in our latitude. It is near the ſouthern pole, between the triangulum auſtrale, and the chameleon ; and conſiſts of eleven ſtars.

AQUA-FORTIS, a corroſive liquor diſtilled from nitre and vitriol, as follows.

Put vitriol into an earthen or iron pot ; if you make a fire under it, the vitriol begins to melt and ſmoak ; by increaſing the fire gradually, it thickens and aſſumes an aſh-colour. Let it be ſtirred with a twig before it becomes ſolid, till it be perfectly dry ; but let it be taken as yet boiling out of the pot ; for if it grows cold therein, it will ſtick ſo faſt that you will hardly be able to get it out. Pound to a ſubtile powder three pounds weight of this calcined vitriol, and mix them well with four pounds of nitre well dried, and pulverized very fine. Put theſe together in a cucurbit, or retort, or iron-pot, and then put it in a furnace. At firſt, let the fire be made not much greater than is neceſſary to boil water. When the recipient grows warm, continue the ſame degree of fire, till all the phlegm is expelled, which you will know from the diminution of the heat of the recipient; increaſe the fire gradually, till you ſee a few yellow vapours ariſe. Keep up the ſame fire for an hour or two, and make it ſo ſtrong as to warm the veſſel moderately. Continue this for ſome hours, and letting the veſſels cool, pour the liquor, now emitting reddiſh fumes, out of the recipient into a glaſs veſſel, having a glaſs ſtopple: this liquor thus prepared is your aqua-fortis.

For ſecurity's ſake, you muſt leave, in the cloſure of the recipient and veſſel that contains the matter to be diſtilled, a hole, which may be ſtopped and opened with a wooden peg; for if you happen to exceed the juſt degree of fire, eſpecially in the beginning of the operation, the firſt and more ſubtile ſpirits, which are very elaſtic, come forth; the opening therefore of the hole may give them a paſſage, leſt the veſſels ſhould burſt, which would be very dangerous. As the extracted ſpirits of nitre are with difficulty condenſated into drops, eſpecially in ſultry weather, it will be proper, by reaſon of the calcined ingredients, to pour into the recipient one quarter part of pure water, or rather of the phlegm, extracted out of the aqua-fortis; by which means the ſpirits will be much eaſier received.

AQUA-MARINA, in natural hiſtory, a precious ſtone of a colour compounded of green and blue, nearly reſembling that of ſea-water, from whence the name. The moſt beautiful aqua-marina comes from the Eaſt-Indies; and it is ſaid that ſome of them are found on the borders of the Euphrates, and at the foot of Mount Taurus. The occidental ones come from Bohemia, Germany, Sicily, the Iſle of Elba, &c.

AQUA-REGIA, a corroſive menſtruum having the power of diſſolving gold. It is made in the following manner. Take a pound of common ſalt; melt it in a clean crucible or iron ladle; put it out into an iron mortar, and when cold break it into ſmall pieces. Put theſe into a retort, and pour upon them twice their weight of good aqua-fortis. Place the retort in a ſand furnace, lute on a receiver, and apply a gradual fire, till no more liquor drops from the noſe of the retort.—An aqua-regia may alſo be made, by mixing one part of ſpirit of ſalt with three of aqua-fortis; or by diſſolving the ſame quantity of ſal-ammoniac in it: but this ſhould be done ſlowly, and by degrees, otherwiſe great quantities of offenſive fumes will ariſe. This menſtruum diſſolves iron, copper, tin, gold, mercury, regulus of antimony, biſmuth, and zinc; but not ſilver, unleſs it be deficient in ſtrength.

AQUÆDUCT, in architecture and hydraulics, a canal ſupported by ſtone, timber, &c. for conveying water from one place to another.

AQUARIUS, in aſtronomy, a conſtellation which maketh the eleventh ſign in the zodiac, marked thus, ♒. It conſiſts of forty-five ſtars in Ptolemy's catalogue; of forty in Tycho's, and in the Britannic catalogue of ninety-nine.

AQUATIC, in natural hiſtory, an appellation given to ſuch things as live or grow in the water.

AQUEOUS, ſomething abounding with, or partaking of, the nature of water.

AQUEOUS *Humour*, in anatomy, called alſo the albugineous humour, is the utmoſt of three humours of the eye, and fills up both its cameræ. In this the uvea fluctuates, as it were, and moves at liberty; this humour alſo, when loſt, will be repaired by nature.

AQUIFOLIUM, or AGRIFOLIUM, the holly tree, in botany, an ever-green ſhrub very well known, and was formerly planted in gardens, as an ornament. The manner of raiſing this ſhrub is by ſowing the berries as ſoon as they are ripe, where they will continue a year and a half before they ſpring. The beſt time of tranſplanting this tree is in the beginning of April, in moiſt weather, and then there will be little danger of their growing.

AQUILA, in aſtronomy, a conſtellation of the northern hemiſphere, conſiſting of fifteen ſtars in Ptolemy's catalogue, of ſeventeen in Tycho's, and of ſeventy in the Britannic catalogue.

AQUILA *Marina*, the ſea-eagle, a fiſh of the piſtinacha kind, with a head reſembling, in ſome meaſure, that of a toad.

AQUILEGIA, *Columbine*, in botany, a plant with a branched and fibrous root, of a ſweetiſh taſte. The colours of the flowers are various, as blue, red, white, fleſh-coloured, and green, upon which account it is cultivated in gardens, and they flower in May and June.

ARA, the altar, in aſtronomy, a conſtellation of the ſouthern hemiſphere, conſiſting of eight ſtars.

* **ARABIA**, an extenſive country in Aſia, lying in between fifty-two and ſeventy-ſeven degrees of longitude, and twelve degrees thirty minutes and thirty-five degrees of north latitude. It is a peninſula, bounded on the weſt by the Red Sea, or Arabic Gulph; on the north by Syria; on the north-eaſt by the Euphrates, the gulph of Baſra, or Perſian gulph, and the gulph of Ormus; and on the ſouth by the ſtreights Bab-el-mandel, and the Arabian Sea. It is in length, from the ſtreights Bab-el-mandel, to the north part near the Aleppo, one thouſand three hundred and fifty miles; and in breadth, one thouſand two hundred and ſixty miles. It is divided into Arabia Deſerta, the Deſert Arabia, whoſe chief town is Anah; Arabia Petræa; and Arabia Felix, or Arabia the Happy, the capital of which is Sanaa.

Arabia Petræa, which is to the north, has a chain of mountains to the eaſt, and another to the ſouth; the firſt ſeparates it from Arbia Deſerta, and the other from Yoman. It was anciently the abode of the Idumæans, the Moabites, the Midianites, and the Amalekites. In this country the Iſraelites wandered forty years after they came out of Egypt.

Arabia Deſerta is full of vaſt deſerts. Thoſe that have travelled over them affirm, that there is not a tree to be ſeen for many days journey, nor any thing elſe but a boundleſs plain. There is but one ridge of mountains, about which travellers find tolerable water. The only part where there is paſture, trees, and fruits, is on the borders of the Euphrates, where there are two tolerable towns, Anah and Tegba; alſo the ruins of Palmyra, in which they made themſelves a kind of houſes or huts. Except the inhabitants of theſe, the reſt live in tents, and endeavour to rob the caravans.

Arabia Felix is the beſt country of the three, and yet has many barren mountains and deſerts, without habitations or water. However, the fruitful parts produce drugs, dates, oranges, lemons, corn, grapes, ſpices, great quantities of coffee; and alſo olibanum, myrrh, caſſia, gum arabic, balm, and manna; and the ſea produces coral and pearls. Their horſes and camels are in high eſteem. They have very few rivers, and thoſe ſmall ones, the principal of which are Afan. Falg, and Prim.

The Arabians were formerly called Iſhmaelites; they afterward aſſumed the name of Saracens, which they thought more honourable. Mahommediſm had its birth in this country, and has ſpread greatly in Aſia and Africa. In general, they have a ſwarthy complexion, a ſtern look, and ſeem to be thoughtful and melancholy; they are ſober, very ſuperſtitious, uſe the name of God frequently, and yet many of them are cruel to foreigners, cheats in trade, and robbers in the deſerts. The Arabs tents are made of goats hair, which are wove and ſpun by the women, and ſerve for their whole families; for in the winter, their horſes, as well as wives and children, all lodge together: the emirs, indeed, who are a kind of governors, have two for themſelves and another for their ladies, beſides a little one for their ſervants. When they encamp, the emir's tent is in the middle, and the reſt all round, at a conſiderable diſtance: the place is generally on the top of a hill, that they may look all round them, to prevent being ſurpriſed, and to diſcover a booty. The common Arabs have no other furniture than mats, counterpanes, and cuſhions, with a ſtone for a bolſter, covered with a mat. In the ſummer-time, they lie in the open air. They can take down their tents, pack up their furniture, and decamp in two hours time. Their baggage is carried by camels and oxen; the women walk a-foot, carrying their young children in their arms; and the men mount their horſes, and put themſelves in a fighting poſture. The diet of the Arabs is generally milk-meats, honey, oil, rice, pulſe, beef, mutton, goats fleſh, and the fleſh of camels. Their bread conſiſts of cakes, which they bake every day in pans, in the aſhes, or in ovens, which are ſometimes large jars made for that purpoſe; they are made of nothing but flower and water: their drink is water: they have coffee every morning for breakfaſt, and after meals; their uſual dinners are boiled meat, with rice ſoup and rice pudding. Their butter is as rank as tallow; and therefore they dreſs beans, lentils, and other pulſe with oil. Beſides theſe, when they are near Syria, they get figs, raiſins, dates, apples, pears, dried apricots, and melons. Smoaking tobacco is of great uſe among the men, women, and children. The greateſt perſons have their proviſions placed on a round piece of leather laid upon the ground, in diſhes and plates of copper, with wooden ſpoons, ſitting croſs-legged all round it, and a long piece of ſtriped linen ſerves for napkins. The dreſs of the emirs reſembles that of the Turkiſh quality; which, in winter, is a pair of linen drawers, or breeches; a fine ſhirt, the back part of the ſleeves of which hang to the ground; a caftan of ſattin or mohair, made like a caſſock, which reaches down to the middle of their legs, and has large ſleeves; it is bound to the body with a leathern belt, ſix inches broad, with claſps to make it ſtraiter or let it out; it is embroidered with gold and ſilk, and ſet off with plates of gold; to this they hang a ſhort knife adorned with jewels; they have ſmall crooked poniards, with a ſhagreen ſcabbard, which they put through the belt; the hilt is of ſilver or ſome other valuable ſubſtance: over their drawers they wear a chackier, which ſerves for breeches, ſtockings, and ſhoes; they are made of red, purple, or violet, but never green, that being their prophet's colour; the foot is of yellow leather: the upper garment is a long cloth veſt, with ſleeves, and lined with fur. The ladies have muſlin drawers, and ſhifts embroidered with ſilk at the ends and on the ſeams; alſo little waiſtcoats of cloth of gold, ſattin, or other ſilk ſtuffs, faſtened with two buttons under a ſmall girdle of gold or ſilver, or of gold and ſilk lace, with gold or ſilver claſps; the upper part of the waiſtcoat is open all along the breaſt, with buttons on each ſide, which are only for ornament, this part being never buttoned; the ſleeves are cloſe and ſhort, for they do not reach to the elbow, below which the ſhift-ſleeves appear and hang down to the ground: they have caftans, which they put on in winter, made like waiſtcoats, only they reach to the ground, they tuck up the ſkirts before, and draw them through the ſides of their girdle, that they may not be in the way, and to ſhow the embroidered flowers on their drawers and ſhifts: their upper garments are of ſattin and velvet, like the men's, and ſometimes of gold brocade. They walk bare-foot on carpets, while they are within; at other times, they wear ſmall neat ſlippers; and when they are abroad, they put on plaited buſkins. Their head-dreſs is a gold or ſilver bonnet, made like a cap, and incircled with muſlin embroidered with gold and ſilk, over which is a fillet of coloured gauſe, which they faſten upon their forehead. When they go out, they throw a large muſlin veil over all, which covers their head, neck, face, and ſhoulders, falling down below their girdle. The dreſs of the common Arabs conſiſts only in a courſe ſhirt with long ſleeves, a pair of linen drawers, and a coarſe callicoe caftan, with a leathern belt about their middles, wherein they ſtick their poniard; they adorn the hilt with little pieces of ſilver money: their turbans conſiſt of white muſlin wrapped round a red cap, one of which hangs a little way down, and the other is wrapped about their necks to keep off the heat of the ſun. The mean ſort of women have only a blue ſhirt, with a linen girdle, and a veil over their heads, which they wrap their necks in, and cover the lower part of their face up to their noſes. The maids cover their faces down to their eyes. In ſummer they go bare-foot, and in winter they wear ſlippers. When they cannot get veſts, they wear jackets quilted with cotton.

It cannot be ſaid that theſe Arabs ever marry for love, for they never ſee their wives faces before the ceremony, unleſs it be done by ſtealth. The bride is prepared with bathing, perfumes, and diſcolouring the face: they paint figures on her arms, and every part of the body, and dreſs her with all the finery they can procure; then ſet her upon a mare or camel, covered with a carpet, and ſing her praiſes all the way to the bridegroom's abode. The men take care of the bridegroom, cauſing him to bathe, and then dreſs him, and carry him back in triumph on a mare. After this the men and women feaſt ſeparately, and at night they are brought together. When the women bring in the bride, the bridegroom ſits like a ſtatue, and takes no notice of what they do or ſay, till ſhe throws herſelf at his feet, at which time he claps a piece of gold or ſilver on her forehead. This is repeated thrice, and each time the bride comes in a different dreſs. This done, they are left to conſummate.

The Arabs are naturally lean, ſtrong, and inured to hardſhips: they are very patient under diſeaſes, and ſay, "there is no phyſician but God." However, they ſometimes venture upon the noſtrums of old women, and are very fond of charms. They hate bleeding, becauſe, as they ſay, the life is in the blood; but when they are wounded, they are glad of a ſurgeon's aſſiſtance if they can get it. The language of the Arabs, in general, is ancient, and the moſt copious in the world. Thoſe that underſtand it ſay it is the moſt beautiful. The Arabs make uſe of lunar years, and their epocha begins Wedneſday the 16th of July, 6622, which they call the Hegira, which is the time that Mahommed fled from Mecca.

ARABIAN, relating to Arabia, or the Arabs.

ARABIAN, or ARABIC *Tongue*, a branch or dialect of the Hebrew.

ARABIAN *Figures*, or *Characters*, the numeral figures commonly uſed in arithmetical computations.

ARABIAN *Philoſophy*, the ſtate of philoſophy among the ancient Arabians. Some men of letters have aſſerted, that the ancient Arabs applied themſelves to philoſophical ſpeculations; and to maintain their opinion, raiſe imaginary ſyſtems which they attribute to them, and draw in the religion of the Sabeans to their aid, which they pretend to have been the offspring of philoſophy. But all they advance in favour of this opinion is founded on aſſertions and conjectures; and what are thoſe, where proof and teſtimony are wanting? They are even forced to acknowledge that the Greeks were of another opinion, looking on them as a moſt barbarous and ignorant people, without the leaſt tincture of learning. If credit may be given to Abulfaragius, the Arabian writers themſelves confeſs, that before Iſſamim they were ſunk into the deepeſt ignorance.

Tho' it ſhould be granted that the Arabs were the deſcendants of Abraham, that the Queen of Sheba, who came to Jeruſalem to admire the wiſdom of Solomon, and was the moſt expert, and ſagacious woman of her time, frequently puzzling all the Kings of the Eaſt with her wiſe queſtions, and that theſe Magi, or wiſe men, who came from the eaſt to worſhip our Saviour, were of Arabia, it cannot be inferred from thence, that the Arabs had made any great progreſs in Philoſophy. Yet it is agreed, that before the time of Iſſamin to whom the advance in learning in that country is owing, they ſpoke their native language well, and had ſome knowledge of aſtronomy, and ſucceeded in ſome works of invention, as oratory, poetry, &c.

The Arabian philoſophy was nothing but Sabianiſm; which was a mixture of ſhameful idolatry, and ridiculous ſuperſtition; much more likely to ſubvert and extinguiſh reaſon than propagate true philoſophy; beſides, it is not agreed in what age this Sect firſt appeared. Mahomet laboured ſtrenuouſly to aboliſh it; and he is even ſaid by ſome to have carried his oppoſition ſo far, as to prohibit the very ſtudy of philoſophy. But his followers by degrees got over that reſtraint; the love of learning increaſed, and the philoſophy of Ariſtotle was eſtabliſhed among them, during the memorable caliphate of Al-Mamon. Avicenna flouriſhed in the eleventh century, and Averrhoes an hundred years after him; ſo that the honour of tranſlating the Greek philoſophy into Arabic, cannot belong to them, notwithſtanding what has been ſaid on that ſubject; though they were doubtleſs the chief propagators of it through the countries of Europe.

ARABIAN *Poetry*, was antiently no other than rhiming; for it was deſtitute both of meaſure and cadence. But about the cloſe of the eighth century, and during the caliphate of Al-Raſchid, it became an art, and was regulated by laws of proſody. Renaudot tells us, that the Arabian compoſitions in verſe are ſtill wild and irregular, being neither epic, dramatic, nor lyric: in ſhort, not reducible to any particular kind. Their hymns to the Deity, and their tales, are in the ſame ſtyle.

ARABIAN *Phyſic*, and *Phyſicians*, ſucceeded the Grecian, and handed down the art to us, with conſiderable improvements, chiefly in the pharmaceutical and chemical parts.

ARABLE *Land*, in huſbandry, that land which is fit for tillage, or has actually been plowed.

ARAC, or ARRAC, a ſpirituous liquor imported from the Eaſt-Indies.

It is extracted from a vegetable juice called toddy, which flows by inciſion from the cocoa-nut tree, or from rice. This juice, after being fermented, is diſtilled in the common manner, and the produce is the arac.

ARACHNOIDES, in anatomy, an appellation given to ſeveral different membranes, as the tunic of the cryſtalline humour of the eye, the external lamina of the pia mater, and one of the membranes of the ſpinal marrow.

* ARAL, a great lake, to the eaſtward of the Caſpian Sea, being ſeated between forty-two and forty-eight degrees of north latitude, and is near three hundred and ſixty miles in length, and one thouſand miles in circumference. It is ſurpriſing that this lake ſhould be quite unknown to geographers, till within theſe few years. Several great rivers, which were ſuppoſed to run into the Caſpian Sea, are now known to fall into this lake, particularly the Sihun or Sirr, and the Gihun or Amo, ſo often mentioned by the oriental hiſtorians. It lies between fifty-ſix and ſixty-two degrees of eaſt longitude, and between twelve and forty-ſeven

of north latitude, in the country of the independent Tartars.

ARÆOMETER, or WATER-POISE, an inſtrument to meaſure the denſity or gravity of fluids.

It is generally made of a thin glaſs ball with a taper neck, hermetically ſealed at the top, having firſt as much mercury poured into the ball, as will keep it ſwimming in an erect poſition. The neck is divided into equal parts, and properly numbered; ſo that the lightneſs of the fluid is known by the depth the aræometer ſinks in it; it being evident that the heavier any fluid is, the leſs will be the diſtance the inſtrument will ſink in it; and vice verſa.

* ARARAT, a mountain in Armenia, imagined to be the place where Noah's ark reſted. It is exceeding high, and always covered with ſnow. Several travellers have attempted to get at the top, but could never ſucceed. However, they have been high enough to tremble at the terrible precipices when they looked downwards.

ARÆOTICS, in medicine, remedies which rarify the humours, and render them proper for being carried off by perſpiration through the pores of the ſkin.

ARBITER, in civil law, a judge nominated by the magiſtrate, or choſen by the two contending parties, to decide their differences according to law. The civilians make a difference between arbiter and arbitrator, though both found their power on the compromiſe of the parties; the former being obliged to judge according to the cuſtoms of the law, but the latter is at liberty to uſe his own diſcretion.

ARBITRARY, whatever is left to the choice or determination of men, or not fixed by any poſitive law or injunction. Thus arbitrary fines are mulcts impoſed at the pleaſure of the court or judge.

ARBITRATION, ARBITRAGE, or ARBITRAMENT, a power given by contending parties to ſome perſon or perſons to determine their diſputes.

ARBITRATOR, a private extraordinary judge, choſen by the mutual conſent of both parties, to determine controverſies between them.

ARBOR, the Latin appellation for any tree in general.

ARBOUR, in gardening, a kind of ſhady bower, formerly in great eſteem, but now rejected, on account of its being damp and unwholeſome. Arbours are generally made of lattice-work, either in wood or iron, and covered with elms, limes, hornbeams; or with creepers, as honeyſuckles, jeſſamines, or paſſion-flowers; either of which will anſwer the purpoſe exceeding well, if properly managed.

* ARBUTHNOT (ALEXANDER) was the ſon of the baron Arbuthnot, and was born in the year 1538. He publiſhed Buchanan's Hiſtory of Scotland, in which, though he acted only as editor, it procured him a great deal of ill will, and in all probability gave king James VI. an ill impreſſion of him. His private character was very amiable; he was learned without pedantry, and a great encourager of learning; he had a good taſte in poetry, was an eminent divine, and was well verſed in philoſophy and the mathematics. He died at Aberdeen, on the 20th of October, 1583. He alſo wrote Orations on the Origin and Dignity of the Law.

ARBUTHNOT (Dr. John) an eminent phyſician in the reign of queen Anne, he was the ſon of a clergyman, in Scotland, and educated in the univerſity of Aberdeen, where he took the degree of doctor of phyſic. On his coming to London, his extenſive learning, and agreeable converſation, introduced him, by degrees, into practice, and he became eminent in his profeſſion; in 1709, he was appointed phyſician in ordinary to queen Anne. His polite learning, genteel behaviour and excellent abilities, procured him the acquaintance and friendſhip of the moſt celebrated wits, Pope, Swift, and Gay: He died of an aſthma, in February 1735. He has ſhewn by his works that he was equal to any of his cotemporaries, in wit, humour, vivacity, and learning; and was ſuperior to moſt men in the moral duties of life, in acts of humanity and benevolence.

ARBUTUS, the ſtrawberry-tree, in botany, a genus of ever-green trees.

Of which there are 3 Species; 1. The common ſtrawberry-tree. 2. The ſtrawberry-tree with longer flowers, and egg-ſhaped fruit; and 3. The ſtrawberry-tree with double flowers.

This tree has its name from the reſemblance the fruit bears to that of a ſtrawberry, but is of an auſtere ſour taſte.

The time of this fruit being ripe is in the months of October and November; at which ſeaſon the flowers are blown for the next year's fruit; ſo that from the time of flowering to the ripening of the fruit is one whole year.

The beſt method of propagating theſe trees, ſays Mr. Miller, is by ſowing their ſeeds, which ſhould be preſerved in dry ſand, till

March; at which time you ſhould ſow them upon a very moderate hot bed, (which greatly promotes their vegetation) covering it about a quarter of an inch with light earth, and ſcreening it from froſts, or great rains. Towards the latter end of April your young plants will appear; you muſt therefore keep them clear from weeds, and give them frequent waterings, as the ſeaſon may require, and ſhade them in hot weather; and if your plants have done well, they will be, by autumn, about five or ſix inches high: but as theſe trees are ſubject to receive damage from froſts, eſpecially while they are young, you muſt hoop the bed over, that when bad weather comes, you may cover it with mats and ſtraw to keep out the froſt.

The beginning of April following you may tranſplant theſe trees, each into a ſmall pot; but, in doing of this, be very careful to take them up with as much earth to their roots as poſſible; for they are bad rooting plants, and very ſubject to miſcarry on being removed; and it is for this reaſon I adviſe their being put into ſmall pots: for when they have filled the pot with roots, they may be turned out into large pots, or the open ground, without any hazard of their dying.

When you have put your young plants into the ſmall pots, you ſhould plunge them into another very moderate hot-bed, to encourage their taking new root, ſhading them from the ſun in the middle of the day, and giving them water as they may require; in this bed it will be proper to let the pots remain moſt part of the ſummer; for if the pots are taken out, and ſet upon the ground, the ſmallneſs of their ſize will occaſion the earth to dry ſo faſt, that watering will ſcarce preſerve your trees alive; but if they are kept growing all the ſummer, they will be near a foot high by the next autumn: but it will be adviſeable to ſcreen them from the froſt during their continuance in pots, by plunging them into the ground in a warm place, and covering them with mats in bad weather.

When your trees are grown to three or four feet high, you may ſhake them out of the pots into the open ground, where they are to remain: but this ſhould be done in April, that they may have taken good root before the winter, which would be apt to damage them if newly planted. *Miller's Dict.*

ARCANUM, a ſecret; generally uſed to imply a remedy, whoſe compoſition is concealed, to increaſe its value.

ARCA CORDIS, in anatomy, the ſame with pericardium. See PERICARDIUM.

ARCH, in geometry, ſome part of a curve, intercepted between two points.

ARCH *of a Circle* is a part of its circumference.

Equal ARCHES, thoſe which contain the ſame number of degrees, and are cut from the ſame circle.

Similar ARCHES, thoſe which contain the ſame number of degrees, but cut from unequal circles.

Diurnal ARCH, in aſtronomy, that part of a circle which is deſcribed by any heavenly object between its riſing and ſetting.

Nocturnal ARCH, that part of a circle deſcribed by a heavenly object between its ſetting and riſing. The diurnal and its ſucceeding nocturnal arch are together equal to a whole circle.

ARCH *of Progreſſion*, or *Direction*, the arch of the zodiac, which a planet appears to paſs over when it moves in conſequentia, or according to the order of the ſigns.

ARCH *of Retrogradation*, an arch of the zodiac deſcribed by a planet, while it is retrograde, or its motion contrary to the order of the ſigns.

ARCH *of Viſion*, an arch of an azimuth circle, intercepted between the center of the ſun, after its ſetting, and the horizon, when a ſtar, before hid in his rays, begins to appear again.

ARCH, in architecture, a concave building, erected on a mould bent in the form of a curve, for ſupporting ſome ſtructure.

Arches are either circular, elliptical, or ſtraight, as they are improperly called by workmen.

Circular ARCHES are of three kinds, ſemicircular arches, ſcheme arches, and arches of the third and fourth point.

Semicircular ARCHES have their centers in the middle of the lines drawn from one foot to the other.

Scheme or *Skene* ARCHES are leſs than a ſemicircle, ſome containing ninety, and others only ſeventy degrees.

ARCHES *of the third and fourth Point*, conſiſt of two arches of a circle, meeting in an angle at the top, being drawn from the diviſion of a chord into three or four parts at pleaſure.

Elliptical ARCHES conſiſt of ſemi-ellipſes, and have commonly key-ſtones and impoſts. They are uſually deſcribed by workmen on three centers.

Straight ARCHES are thoſe uſed over doors and windows, having plain ſtraight edges, both above and below, parallel to each other; but both the ends and joints point towards a center. See BRIDGE.

Triumphal ARCH, a ſtately gate of a ſemicircular form, adorned with ſculpture, inſcriptions, &c. erected in honour of thoſe who have deſerved a triumph.

ARCH-ANGEL, in theology, an intellectual being, or angel of the ſecond order in the celeſtial hierarchy.

ARCHANGEL, in botany, a name given to the lamium. See LAMIUM.

ARCH-BISHOP, a prelate that has ſeveral ſuffragan biſhops under him. Though biſhops, in the primitive church, were all veſted with the ſame office and authority, yet, as Chriſtianity increaſed, it was found neceſſary to enlarge the epiſcopal power: therefore, as before there was commonly a biſhop placed in every great city, ſo now, in every metropolis, as the Romans called it, or mother-city, of every province, wherein were courts of civil judicature, there was a metropolitan, or archbiſhop, who had eccleſiaſtical juriſdiction over all the biſhops of that province. His juriſdiction conſiſted in ordaining, or ratifying, the elections and ordinations of all other biſhops; and once a year he was to ſummon them all to a ſynod, in which he preſided, to enquire into their conduct, to cenſure with ſuſpenſion, or deprivation, and to hear and determine cauſes between contending biſhops.

The firſt eſtabliſhment of archbiſhoprics in England, ſays Bede, was, in the time of Lucius, ſaid to be the firſt Chriſtian king of England; who, after the converſion of his ſubjects, erected three archbiſhoprics, in London, York, and Landaff, then called Caerleon. The dignity of archbiſhop continued in the ſee of London 180 years, when it was tranſlated to Canterbury, where it has continued ever ſince. York remains a metropolitical ſee to this day. The archbiſhop of Canterbury is ſtiled "Primate and Metro-"politan of all England;" and the archbiſhop of York, "Primate and Me-"tropolitan of England."

ARCHDEACON, an eccleſiaſtical dignitary, or officer, next to a biſhop, whoſe office extends over part, or ſometimes the whole dioceſe. There are ſixty archdeacons in England, who viſit the pariſhes ſubject to their juriſdiction, enquire into the repairs of churches, reform abuſes, ſuſpend, excommunicate, &c. And in many places, induct clerks into their benefices.

ARCH-DUKE, a title given to dukes of a greater authority and power than other dukes.

ARCHER, in the ancient military art, a perſon who fought with a bow and arrows.

ARCHES, or *Court of* ARCHES, the ſupreme court belonging to the archbiſhop of Canterbury, to which appeals lie from all the inferior courts within his province.

ARCHETYPE, the original model of a work, which is copied after to make another like it.

This term is uſed by minters to ſignify the ſtandard weight by which the others are adjuſted.

ARCHIL, *Archilla*, in botany, a whitiſh moſs growing upon rocks in the Canary and Cape Verd Iſlands, and which yields a rich purple tincture, fugitive indeed, but extremely beautiful.

The dyers do not often uſe this drug by itſelf, on account of its dearneſs and the periſhableneſs of its beauty. The chief uſe they make of it is, for giving a blood to other colours, as pinks, &c. This is effected by paſſing the dying cloth or ſilk through hot water, lightly impregnated with the archil. The bloom thus communicated ſoon decays upon expoſure to the air. Mr. Hellot informs us, that by the addition of a little ſolution of tin, this drug gives a durable dye; that its colour is at the ſame time changed towards a ſcarlet; and that it is the more permanent, in proportion as it recedes the more from its natural colour.

It is remarkable a ſolution of archil in water, applied on cold marble, ſtains it of a beautiful violet or purpliſh-blue colour, far more durable than the colour which it communicates to other bodies.

ARCHILOCHIAN, a term in poetry, applied to a ſpecies of verſe invented by Archilochus. Theſe verſes conſiſt of ſeven feet, the four firſt of which are ordinarily dactyls, though ſometimes ſpondees, and the three laſt trochees.

ARCHIPELAGO, in geography, a general name for a ſea interrupted with a great number of iſlands. The moſt celebrated Archipelago, and that to which the name is in ſome meaſure appropriated, lies in the ſea between the coaſts of Greece, Macedonia, and Aſia.

ARCHITECT, a perſon ſkilled in architecture, who not only draws the plans of edifices, but alſo ſuperintends and directs the artificers.

ARCHITECTONIC, ſomething endowed with the power and ſkill of building, or calculated to aſſiſt the architect.

ARCHITECTURE, the art or ſcience of erecting edifices, either for habitation or defence.

Architecture, is doubtleſs, of very great antiquity, and was, perhaps, preceded only by agriculture itſelf. Hence Theodore calls the latter the eldeſt ſiſter of architecture. The exceſſive heats of ſummer and ſeverity of winter, the inconvenience of rain, the violence of wind, ſoon inſtructed mankind to ſeek for ſhelter, and provide themſelves with proper retreats to defend themſelves againſt the inclemencies of the weather. But theſe at firſt were only ſmall huts, built very rudely with the branches of trees, and very indifferently covered. In the time of Vitruvius, they ſhewed at Athens, as a curious relic of antiquity, the roof of the Areopagus, made of clay; and at Rome, in the temple of the Capitol, the cottage of Romulus thatched with ſtraw.

After theſe rude eſſays, buildings of wood were introduced, and theſe ſuggeſted the ideas of columns and architraves. The columns were modelled from the trees uſed to ſupport the roof and the architrave from the large beam laid between the columns and the roof.

But, the workmen became every day more induſtrious and more expert. Inſtead of thoſe ſlight huts, with which they were at firſt contented, they began to erect walls of ſtone and brick upon ſolid foundations, and to cover them with boards and tiles. In proceſs of time, their reflections, founded on experience, led them to diſcover the juſt rules of proportion.

Moſes tells us that Cain built a city; and hence we learn both the time when, and place where, architecture had its origin. Aſia was therefore the cradle of architecture; there it had its birth, and there it attained a conſiderable degree of perfection; and thence it ſpread into other parts of the world. Babylon and Ninevah, the largeſt and moſt magnificent cities in hiſtory, were built by Nimrod the grandſon of Noah, and the firſt of conquerors. They were not indeed at firſt carried to that prodigious magnificence which afterwards aſtoniſhed the world; but they were very large and extenſive. It is indeed a misfortune that not one ſingle treatiſe written by the Greeks upon architecture, has reached our hands. The only books we have of theirs upon this ſubject, are the ſtructures of thoſe antient maſters ſtill ſubſiſting, whoſe beauty is univerſally acknowledged; and which have been the admiration of all good judges. Theſe ſtructures are ſuperior to all the precepts they could have left us; as practice in every thing infinitely excels theory. The Romans borrowed the art from the Greeks, and under Auguſtus, when good taſte univerſally prevailed, carried it to a great degree of perfection. But it fell with the weſtern empire, and was not recovered for the ſpace of twelve centuries. In the two laſt centuries, the architects of Italy, England, and France, employed themſelves wholly in retrieving the primitive ſimplicity and beauty of ancient architecture; and ſo far ſucceeded, that our churches, palaces, &c. are now built after the models of antiquity. Hence every thing is, or ſhould be, proportioned to the bulk, ſtrength, delicacy, richneſs, or ſimplicity deſired; and conſequently a different proportion obſerved in the various members of the edifice. In theſe different proportions conſiſt the five orders of architecture, all invented at different times and on different occaſions. Theſe are called the Tuſcan, Doric, Ionic, Corinthian, and Compoſite. See ORDER.

Architecture is divided into civil, military, and naval.

Civil ARCHITECTURE teaches the method of erecting buildings, as palaces, churches, private houſes, &c. and the rules to be obſerved are ſolidity, convenience, and beauty; order, diſpoſition, proportion, decorum, and œconomy. Solidity implies the choice of a good foundation, and ſound materials; convenience conſiſts in ſo ordering the parts of an edifice that they may not embarraſs one another; beauty is that agreeable form and pleaſing appearance which it exhibits to the eye of the ſpectator; order gives every part of the building a convenient ſize; and the diſpoſition is the agreeable union of all the parts. Proportion is the relation that all the work has to its parts, and which every one ſeparately hath to the whole; decorum teaches the architect to have a regard to deſign, cuſtom, and nature; and œconomy, to conſider the expence, in order to regulate the form and manner of the fabric. The only entire piece upon architecture among the ancients is that of Vitruvius: and the moſt celebrated of thoſe who have written on that ſubject ſince his time, are, Baptiſts, tiſta, Alberti, Palladio, Scammozi, Blondel, Goldman, Perrault, Sir Henry Wotton, Sturminus; Ware, and Wolfius.

Military ARCHITECTURE, is what is generally called fortification. See FORTIFICATION.

Naval ARCHITECTURE, the art of building ſhips. See SHIP-BUILDING.

Counterfeit ARCHITECTURE, that which conſiſts of projections, painted either in claro obſcuro, or in colours imitating marble.

ARCHITECTURE *in Perſpective*, a ſort of building, wherein the members are of different modules, and diminiſh proportionally to their diſtance, in order to make the ſtructure appear longer to the view than it really is.

ARCHITRAVE, in architecture, that part of the order of columns, lying immediately upon the capital. It has its name from repreſenting the principal beam in a timber building. This member when placed over the chimney, is called the mantle-piece; and when over a door or window, the hyperthyron.

ARCHIVE, or ARCHIVES, an apartment in which the records, charters, and papers of a ſtate or community, are depoſited.

ARCHMARSHAL, the grand marſhal of the empire; a dignity belonging to the elector of Saxony.

ARCHTREASURER, the grand treaſurer of the German empire; a dignity belonging to the duke of Brunſwic, king of Great Britain. It is alſo claimed by the elector palatine.

ARCTIC, in aſtronomy, an epithet applied to the north-pole, and alſo to a ſmall circle of the ſphere parallel to the equator, and 23° 30′ diſtant from the north pole. See POLE and SPHERE.

ARCTOPHYLAX, in aſtronomy, the name of a conſtellation otherwiſe called Bootes. See BOOTES.

ARCTURUS, in aſtronomy, a ſtar of the firſt magnitude in the ſkirt of Bootes. Its longitude is 20° 58′ 2″ of ♎, and its latitude 3° 57′ 0″ N.

ARCUTIO, the name of a machine conſiſting of a board covered with hoops, uſed by the nurſes of Florence, to prevent the child from being overlaid. Every nurſe is obliged to lay her child in an arcutio, under pain of excommunication.

ARDASSES, in commerce, the coarſeſt of all the ſilks brought from Perſia.

ARDEA, the heron, in natural hiſtory, a genus of long beaked birds; diſtinguiſhed from all others by having the middle toe of each foot ſerrated, or jagged, with a ſeries of ſcales on its outer ſide.

ARDENT, ſomething hot, or as it were burning.

ARDENT *Fever*, a violent burning fever. See FEVER.

ARDENT *Spirits*, thoſe ſpirits diſtilled from fermented vegetables; ſo called becauſe they eaſily take fire and burn.

AREA, in a general ſenſe, any plain ſurface whereon we walk, &c.

The word is Latin, and ſignifies a threſhing-floor, &c.

AREA, in geometry, the ſuperficial content of any figure. Thus if a figure, ex. gr. a field be in form of a ſquare, and its ſide be 30 feet long, its area is ſaid to be 900 ſquare feet, or it contains 900 little ſquares, each a foot every way. For the method of finding the areas of figures, ſee each under its reſpective name.

AREA, in aſtronomy, the ſpaces which revolving bodies deſcribe by means of rays drawn to the center of force.

ARENA, in antiquity, the place where the gladiators, &c. fought; ſo called from its being always covered with ſand, to conceal the blood ſpilt in the combat, from the view of the people.

AREOPAGUS, a ſenate or ſovereign court, held on Mars's Hill near Athens, famous for the juſtice and impartiality of its decrees. Their power was very great; they had the diſpoſal and management of the public funds; the care of all the young men in the city particularly belonged to them, and their power extended to all ages and ſexes. Two things are very remarkable; the firſt, that they ſat in the open air; and the ſecond, that they heard and determined all cauſes in the dark, that, by ſeeing neither of the parties their judgment might remain unbiaſſed.

* ARETHUSA, in fabulous hiſtory, the daughter of Nereus and Doris, and companion of Diana, who changed her into a fountain to deliver her from the purſuit of her lover Alpheus.

* ARETIN (GUIDO) a Benedictine monk, in the eleventh century, who became famous for diſcovering a new method of learning muſic by the ſix notes, *ut, re, mi, fa, ſol, la.* Upon this ſubject he publiſhed a book intitled *Micrologus*, and a Letter, which has been inſerted by cardinal Baronius in his Annals, under the year 1022.

ARGEMONE, in botany, the thorny Mexican poppy, a genus of plants with roſaceous flowers, and a unilocular capſule for its fruit.

ARGENT, in heraldry, the white colour in the coats of arms of gentlemen, knights, and baronets; the white in the arms of ſovereign princes, being called luna; and that in the arms of the nobility, pearl. This is expreſſed, in engraving, by the parts being left plain, without any ſtroke from the engraver.

ARGENTARIA CRETA, in natural hiſtory, an earth perfectly white and pure, found in Pruſſia, and greatly eſteemed for cleaning plate.

ARGENTINA, in natural hiſtory, the name of a fiſh found in ſeveral parts of the Mediterranean.

The principal mark that diſtinguiſhes it from other fiſh, is the air bladder, which is conical at both ends, and outwardly looks as if covered with poliſhed ſhining leaf ſilver. This is made uſe of to counterfeit pearls. It is often brought to the fiſh markets at Rome.

ARGENTINA, ſilver-weed or wild tanſy, in botany, a low creeping plant, with winged leaves, It is perennial; common by the ſides of rivulets and in moiſt uncultivated places; and flowers in June.

The leaves of argentina have been generally looked upon as ſtrong aſtringents, and recommended as ſuch in fluxes and hœmorrhages; but in fact, this aſtringency is very weak. The ſpiritous extract is ſtronger than the watery, and proportionably ſmaller in quantity.

* ARGO, in fabulous hiſtory, the ſhip wherein Jaſon and the reſt of the Theſſalian and Argive heroes ſailed to Cholchis to fetch the golden fleece. This ſhip is ſaid to have had fifty oars, and to have been fifty feet in length.

* ARGONAUTS, in fabulous hiſtory, the moſt diſtinguiſhed youths of Greece, who accompanied Jaſon in his expedition to obtain the golden fleece. Authors are not agreed as to the names or number of theſe youths; however, the principal were Ancæus, Idmon, Orpheus, Augias, Calais, Zethus, Caſtor, Pollux, Tiphys, and Lynceus; it is alſo ſaid, that Hercules was with them.

ARGO *Navis*, or the ſhip, in aſtronomy, is the name of a conſtellation of fixed ſtars in the ſouthern hemiſphere. The number of ſtars is 8 in Ptolemy's catalogue; in Tycho's 11; and Mr. Flamſtead's 25.

ARGOL, red tartar. See TARTAR.

ARGUMENT, *Argumentum*, in rhetoric and logic, an inference drawn from premiſes, the truth of which is indiſputable or at leaſt highly probable.

ARGUMENT, in aſtronomy, a known arch, by the aſſiſtance of which we ſeek another unknown. Thus the argument of the moon's latitude is her diſtance from the node.

ARGUMENT, the abridgement or heads of a book, chapter, poem, &c.

ARGUMENTATION, the act of arguing; and the manner of framing arguments.

ARGUS, in natural hiſtory, the name of an uncommon ſerpent, found in Guinea; and ſo called from its being covered with ſpots from the head to the tail, reſembling eyes.

*ARGUS, in fabulous hiſtory, the ſon of Ariſtor, was ſaid to have had an hundred eyes, fifty of which were always open. Juno made choice of him to guard Io, whom he had transformed into a white heifer; but Jupiter pitying Io, for being ſo cloſely confined, ſent Mercury, who, with his flute, charmed Argus to ſleep, ſealed up his eyes with his caduceus, and cut off his head: Juno to reward his fidelity, turned him into a peacock, and placed his eyes in his tail.

ARGUS is alſo the name of a very curious ſhell, about three inches long, two in diameter, and ſomewhat leſs in height. It is covered with a multitude of round ſpots, like eyes, from whence it has it's name. It is brought from Africa and the Eaſt Indies.

* ARGYLESHIRE, in Scotland, a mountainous country, the inhabitants living moſtly by grazing of cattle, hunting, and fiſhing. The coaſt is full of high rocks and black mountains, covered with heath. It has a provincial ſynod, containing five Preſbyteries, and forty-nine pariſhes. This ſhire makes part of the Highlands, and has the Iriſh-Sea and frith of Clyde on the ſouth, Perthſhire on the eaſt, Lochaber on the north-eaſt, and ſeveral iſlands on the north-weſt.

* ARGYRA, in fabulous hiſtory, a nymph beloved by Solemnus, but he being unable to ſupport her cruelty, died of grief; on which Venus changed him into a fountain that bore the nymph's name, whoſe waters had ſuch an effect as to make thoſe who bathed in it immediately forget their miſtreſſes.

* ARIADNE, in fabulous hiſtory, daughter of Minos, king of Crete, who

having fallen deeply in love with Theſeus, ſhe gave him a clue, by which he eſcaped out of the labyrinth, after he had killed the Minotaur, and carried his fair deliverer to the iſle of Naxos, where he ungratefully left her pregnant. But Bacchus afterwards coming thither, fell paſſionately in love with her, married her, and as a teſtimony of his affection, placed the crown ſhe wore as a conſtellation among the ſtars.

ARIANS, in eccleſiaſtical hiſtory, a ſect of heretics, who followed the opinions of Arius, a preſbyter of Alexandria. He broached his hereſy in the beginning of the fourth century. The Arians denied the three perſons in the holy Trinity to be of the ſame ſubſtance; aſſerted that there was a time when the Son was not; that he was created in time, mutable in nature, and, like the angels, liable to ſin; and that being united to human fleſh, he ſupplied the place of a human ſoul, and conſequently was ſubject to ſufferings and pain. In their doxologies they aſcribed "Glory to the Father, "through the Son, and in the Holy "Ghoſt."

ARIANISM, the doctrine or tenets of the Arians.

ARIES, the ram, in aſtronomy, a conſtellation of fixed ſtars, drawn on the globe in the figure of a ram. It is the firſt of the twelve ſigns of the zodiac, and is marked thus ♈.

The number of ſtars in the conſtellation Aries, in Ptolemy's catalogue is 18; in Tycho's 21; and in Mr. Flamſtead's 65.

* ARION, in fabulous hiſtory, a celebrated horſe, more famous in poetic hiſtory than Bucephalus in the hiſtory of Alexander. Authors ſpeak variouſly of his origin, though he is generally allowed to have been produced by Neptune, and nurſed by the Nereids. Hercules mounted him when he took the city of Elis, and he won the prize for racing at the Nemean games.

* ARIOSTO (LUDOVICO or LEWIS) a celebrated Italian poet, born of a noble family, at the caſtle of Reggio, in Lombardy, in the year 1474. He tranſlated ſeveral pieces out of French and Spaniſh into Italian, wrote ſeven ſatires and five comedies; but his Orlando Furioſo, which he began when he was about thirty years of age, is the moſt celebrated of all his works. Paſſing one day by a potter's ſhop, he heard the potter uttering a ſtanza out of the Olrando Furioſo, which he pronounced in ſo bad a manner, that Arioſto being vexed, broke with his ſtick ſeveral of the pots which ſtood expoſed to ſale. The potter expoſtulated with him in very ſevere terms, for injuring a poor man who had never injured him. "Yes, "you have, ſaid Arioſto, and I have not "yet ſufficiently revenged myſelf upon you "for the injury you have done me to my face." He was however of an affable, eaſy, and condeſcending temper. His attachment to poetry did not prevent his engaging in public affairs, for he was employed in embaſſies and negociations in different parts of Italy. He died at Ferrara on the 8th of July 1559. His Orlando Furioſo has been tranſlated into Engliſh by Mr. Huggins.

ARISTA, among botaniſts, a long needle-like beard, which ſtands out from the huſk of a grain of corn, graſs, &c. It is alſo called awn.

* ARISTÆUS, n fabulous hiſtory, the ſon of Apollo and Cyrene, was born in Lybia, and brought up by the Nymphs. He married Autonoe, the daughter of Cadmus, by whom he had Actæon. It is alſo ſaid that he found out the art of extracting honey, and making oil and cheeſe; and that for his ſervices to mankind, the Gods placed him among the ſtars, where he is the Aquarius of the Zodiac.

ARISTOCRACY, a form of government where the ſupreme power is lodged in the principal perſons of the ſtate, either on account of their nobility, their capacity, or their probity.

* ARISTOPHANES, the celebrated Greek comic poet, was a citizen of Athens. He expoſed upon the ſtage the deſigns of the magiſtrates and generals of the Athenians, with great wit and ſeverity. He flouriſhed about four hundred and thirty-ſix years before the Chriſtian æra; was cotemporary with Socrates, Plato, and Euripides, and compoſed above fifty comedies, of which, only eleven are now extant: theſe abound with the moſt refined and delicate wit.

* ARISTOTLE, or The Philoſopher, was born at Stagyra, a ſmall city of Macedon, three hundred and eighty four years before the Chriſtian æra. He was at firſt a libertine, and commenced ſoldier; but he ſoon determined to apply himſelf to the ſtudy of philoſophy, and therefore went to Athens, to become one of Plato's diſciples, and ſoon ſurpaſſed all the great men in Plato's ſchool. After the death of Plato, three hundred and forty-eight years before Chriſt, Ariſtotle retired to Atarnya, a ſmall city of Myſia, where his friend

Hermias reigned. That prince gave him his daughter, Pythias, in marriage. Some years after, king Philip appointed him preceptor to his ſon Alexander, which office he enjoyed eight years, when he retired to Athens, where he ſet up his ſchool, and the magiſtrates giving him the Lycæum, he there taught philoſophy to his diſciples while he was walking with them; from whence his ſect obtained the name of Peripatetics. At length Eurymedon, the prieſt of Ceres, accuſed Ariſtotle of impiety, when being afraid of ſuffering the fate of Socrates, he retired to Chalcis, where he died, aged ſixty-three. Some aſſert that he poiſoned himſelf, others that he died of the colic, and others, that he leapt into the Euripus, becauſe he could not diſcover the cauſe of its ebbing and flowing. He left a daughter by Pythias, who was married to a grandſon of Demaratus, king of Sparta; and he had by a concubine, a ſon named Nicomachus. Ariſtotle had a great ſhare in the intrigues of the courts of Philip and Alexander; for philoſophy was far from rendering him of a moroſe and ſavage diſpoſition: on the contrary, he was an honeſt, tender, and generous friend. Ariſtotle wrote a great number of books, the moſt eſteemed of which, are, his Ethics, his Logic, his Hiſtory of Animals, his Poetics, and his Rhetoric.

There were many who followed the doctrine of Ariſtotle in the reigns of the twelve Cæſars, and their numbers greatly encreaſed under Adrian and Antoninus. Alexander Aphrodinus was the firſt profeſſor of the Peripatetic philoſophy at Rome, being appointed for that purpoſe by the emperors Marcus Aurelius, and Lucius Verus; and in the ſucceeding ages, the doctrines of Ariſtotle prevailed amongſt almoſt all the men of letters.

ARISTOTELIAN, relating to the philoſopher Ariſtotle.

ARISTOTELIAN *Philoſophy*, the philoſophy of Ariſtotle, ſometimes called the peripatetic philoſophy.

ARITHMETIC, the art or ſcience of computing by numbers.

We have very little intelligence with regard to the invention of this ineſtimable ſcience. Some attribute it to Seth, others to Noah, and the Turks to Enoch, whom they call Edris. Many imagine it had its riſe with the introduction of commerce, and conſequently fix its epocha with that of the Tyrians, who did not begin to flouriſh till about a thouſand years after the flood. Joſephus tells us, that Abraham taught the Egyptians arithmetic during the time of his ſojourning in their country: though Pliny and Strabo ſay, that the inundations of the Nile gave occaſion to their inventing both arithmetic and geometry. It is however certain, both theſe ſciences were held in the higheſt veneration, and committed to the care of their prieſts, who founded their theology on them. The Greeks owed their knowledge in arithmetic to the Egyptians; and Pythagoras built his philoſophical ſyſtem upon numbers, affirming that the nature of numbers extends through the whole univerſe, and that the knowledge of numbers is the knowledge of the Deity. The ancient arithmetic, however, fell far ſhort of the modern; their notation was very imperfect, and conſequently the operations abſtruſe and tedious. They wanted the cypher, or a character that of itſelf ſignifies nothing, to fill up a place, and change the value of their numbers in a decuple progreſſion, their ſeries extending only to nine. We owe our preſent notation to the genius of the eaſtern nations, and received it from the Arabians, who learned it from the Indians. But when or by whom it was invented cannot be known. It was known in Europe before the year 1000, and in Britain before 1150.

The oldeſt treatiſe extant on the theory of arithmetic is the 7th, 8th, and 9th books of Euclid's Elements; where he has delivered the doctrine of proportion, and that of prime and compoſite numbers.

After the Arabian notation was known in Europe, we find many writers both upon the theory and practice; and as learning advanced, ſo did the knowledge of numbers, which by degrees received great improvements.

The fundamental rules of arithmetic are four, namely, addition, ſubtraction, multiplication, and diviſion. See each under its proper article.

But beſides theſe, there are other rules contrived for facilitating computations of every kind; as the rule of proportion, rule of three, or golden rule, the rules of fellowſhip, barter, exchange, intereſt, extraction of roots, &c. which the reader will find under the ſeveral heads of PROPORRTION, FELLOWSHIP, INTEREST, PRACTICE, &c.

Common ARITHMETIC comprehends, beſides the doctrine of integers, that of broken numbers, or fractions. See FRACTION.

ARITHMETIC *of Infinites*, the doctrine of infinite ſeries. See SERIES.

Inſtrumental ARITHMETIC, that which is performed by means of inſtruments, as rules, ſcales, Napier's bones, &c.

Literal or *Specious* ARITHMETIC, that performed by the letters of the alphabet. See ALGEBRA.

Logiſtical or *Sexageſimal* ARITHMETIC, the doctrine of ſexageſimal fractions. See SEXAGESIMAL.

Univerſal ARITHMETIC, a name given by Sir Iſaac Newton to algebra, or the calculation of quantities in general.

Common arithmetic has two kinds of principles; the firſt are general rules, independent of the characters made uſe of to expreſs numbers: the ſecond are rules which depend on theſe characters, and are properly called rules of arithmetic. The former contain only the general properties of proportions, and take place univerſally, be theſe proportions ſtated how they will.

Hence it follows, that by noting numbers by general expreſſions, though they do not denote one number more than another, we may form certain rules relative to operations, which may be performed by numbers ſo expreſſed. Theſe rules ſhew the reſult of one or more operations performed by numbers expreſſed in a general manner, and in the moſt ſimple method; and this reſult is properly nothing more than arithmetical operation, expreſſed in characters, which will vary according to the different arithmetical values we aſſign the quantities ſubſtituted for numbers.

In order to ſet this idea of algebra in a clearer light, it may not be amiſs to mention, in a curſory manner, the four common rules of arithmetic. Addition conſiſts in adding any numbers propoſed into one total, without any other operation, If for example, it were required to add two diſſimilar quantities together, as a and b, we ſet them down ſimply $a + b$, the reſult of which is nothing more than an indication, that if a repreſents a certain number, and b another, theſe numbers muſt be added together: The expreſſion $a + b$ is therefore nothing more than an indication of an arithmetical addition, the ſum of which will be different, according to the different arithmetical values aſſigned to a and b. Suppoſe it were required to add $5\,a$ to $3\,a$, we may write $5\,a + 3\,a$; but it is plain that this may be expreſſed in a more ſimple manner: viz. $8\,a$; and conſequently the arithmetical operation ſhould be expreſſed in that manner.

Hence it follows, that addition in algebra expreſſes the ſum or aggregate of ſeveral numbers, generally in the moſt ſimple manner, and ſaves the arithmetician as much labour as poſſible.

In ſubtraction, the thing is the ſame; for if it be required to ſubtract b from a, we write $a - b$; becauſe it is impoſſible to expreſs this operation in a more ſimple manner: but ſhould it be required to ſubtract $3\,a$ from $5\,a$, it would be improper to write $5\,a - 3\,a$; becauſe, if a had any numerical value, it would occaſion the trouble of ſeveral arithmetical operations; but ſimply $2\,a$, which is more convenient in calculation.

The ſame thing is true in multiplication and diviſion. If we would multiply $a + b$, by $c + d$, we might write indifferently $\overline{a \quad b} \times \overline{c + d}$, or $a\,c + b\,c + a\,d + b\,d$; though the firſt method ſeems the more proper, becauſe it requires fewer arithmetical operations: in the former there are only two additions and one multiplication neceſſary; in the latter, three additions and four multiplications. But if it ſhould be required to multiply $5\,a$ by $3\,a$, we ſhould write $15\,a$, and not $5\,a \times 3\,a$; becauſe the firſt has only two arithmetical operations, and the ſecond three. In the ſame manner, to multiply $a + b$ by $a --- b$, we ſhould write $a\,a - b\,b$; becauſe this reſult would be more commodious than $a\,a + a\,b - b\,b$, and at the ſame time furniſhes an uſeful theorem, namely, that the product reſulting from the ſum of two numbers, multiplied by the difference of the ſame numbers, is equal to the difference of their ſquares.

In diviſion, inſtead of writing $\frac{20\,ab}{5\,b}$ we ſhould ſet down ſimply $4\,a$: but to expreſs the diviſion of $a\,b$ by $c\,d$, we muſt write $\frac{a\,b}{c\,d}$; becauſe a more ſimple expreſſion cannot be found.

Hence it is evident that Sir Iſaac Newton was in the right to call algebra univerſal arithmetic; becauſe it exhibits all the general and common rules of every kind of arithmetic, in a more clear, conciſe, and ſimple method. But it may be aſked, why we ſhould have recourſe to perplexity? In all arithmetical queſtions the numbers are expreſſed; of what uſe therefore can it be to give them a literal expreſſion? The anſwer is eaſy: there are queſtions far more complicated; and in the ſolution of theſe we are obliged to form combinations, of which the number or numbers ſought muſt form a part. We muſt therefore be poſſeſſed of an art, whereby we may repreſent theſe combinations without

out knowing the number ſought; and conſequently expreſs the numbers by characters not numerical: becauſe it would be very improper and inconvenient to expreſs an unknown number by a numerical character, which we had no reaſon to expect would be its real value.

ARITHMETICAL, belonging to, or performed by arithmetic.

ARITHMETICAL *Complement of a Logarithm, Sine, Tangent, &c.* the ſum or number which a logarithm, &c. wants of 10,000000.

ARITHMETICAL *Mean.* See MEAN.

ARITHMETICAL *Progreſſion.* See PROGRESSION.

ARK, ARC, or ARCH. See the Article ARCH.

ARK, in the ſcripture language, a kind of veſſel, made by the command of God himſelf, for preſerving Noah and his family, together with the ſeveral ſpecies of animals, from the univerſal deluge. The ancients inform us, that the Egyptians uſed barks made of bulruſhes on the Nile; and that theſe barks were of an oblong ſquare figure, and ſo light as to be carried by a ſingle man. There is great reaſon to think that Noah's ark was made in the form of theſe Egyptian boats, but of an infinitely larger ſize. If we reckon the Hebrew cubit at 20 inches and a half, Engliſh meaſure, the length of the ark, muſt have been 512 feet 6 inches; its breadth, 85 feet 5 inches; its height, 51 feet 3 inches; and its whole capacity, or hollow part of the ark, 229822 feet 4 inches nearly. The covering of the ark had doubtleſs ſomething of a declivity, in order to carry off the water that fell upon it. The height of it might be divided into four ſtories, allowing three cubits and a half to the firſt, ſeven to the ſecond, eight to the third, and five and a half to the fourth, and leaving the remaining five cubits of the thirty in height for the thickneſs from top to bottom, and the three bridges or floors of the three laſt ſtories.

The number of beaſts which muſt have entered into the ark, is not ſo great as might be imagined. We are not acquainted with above an hundred and thirty ſpecies of four-footed beaſts; nor do we know of a greater number of birds; and with regard to reptiles not more than thirty ſpecies. We know only ſix ſpecies of beaſts larger than an horſe. There are very few equal to this creature, and many much leſs, and which are under the ſize even of ſheep: ſo that all the four-footed beaſts, including three thouſand ſix hundred and fifty ſheep, which may be ſuppoſed neceſſary for the nouriſhment of ſuch animals as live on fleſh, take up ſcarce any more room than an hundred and twenty oxen, three thouſand ſeven hundred and thirty ſheep, and fourſcore wolves. Of birds or fowls few are larger than the ſwan, and almoſt all are leſs. As for reptiles, or creeping animals, their number is not great. They generally are ſmall. Many of them can live in water, and conſequently it was unneceſſary to bring them into the ark. All the four-footed beaſts might have been eaſily lodged in ſix and thirty ſtables; and all the birds in as many voleries; allowing for each ſtable and volery, five and twenty feet and a half in length, nine and twenty in width, and thirteen and a half in height. There might be more than thirty-one thouſand one hundred and ſeventy-four buſhels of freſh water in the keel; which is more than ſufficient for four times as many men and beaſts to drink in one year, as were in the ark. The granary and magazine, which was in the firſt ſtory, might contain more proviſions than were neceſſary for the nouriſhment of all the animals in the ark for one year; whether they lived on hay, fruits, and herbs; or whether there were ſheep deſigned for the food of ſuch animals as live on fleſh. Beſides the places requiſite for the beaſts and birds, and their proviſions, Noah might ſpare room in the third ſtory for ſix and thirty cabbins to depoſit his houſhold utenſils, the inſtruments of huſbandry, grains and ſeeds to ſow the earth with after the deluge. He might make room in it for a kitchen, a hall, four chambers, and a ſpace of about eight and forty cubits in length to walk in. The reader may conſult M. le Pelletier's work upon Noah's ark, and that of John Buteo on the ſame ſubject.

There are ſeveral difficulties propoſed with relation to Noah's ark, none of which have yet been ſatisfactorily ſolved. One queſtion is, how long time Noah was employed in building it? Interpreters generally believe, that he was an hundred and twenty years; but ſome allow him only 52 years; ſome no more than ſeven or eight, and others ſtill much leſs. The Mahomedans ſay he had but two years allowed him for this work. Another qoeſtion is, what kind of wood is meant by gopher wood? Some think cedar, or box, others cypreſs, the pine, fir-tree, and the turpentine tree.

It muſt be owned, that it is a point which ſtill remains undecided; but if our opinion would be of any weight, we ſhould prefer that which ſuppoſes it to mean cypreſs. But the greateſt difficulty relating to Noah's ark, regards its ſize and capacity; and how they were able to build a veſſel ſufficient to contain the men and beaſts, beſides the proviſions neceſſary for the ſupport of both, during the whole year. To remove theſe difficulties, it has been neceſſary to be very particular in enquiring into the length of the cubit mentioned by Moſes, into the number of the beaſts that were admitted into the ark, as well as into the dimenſions of this vaſt building; and after the niceſt examination, computations, and taking the dimenſions with the utmoſt geometrical accuracy, the moſt learned and able calculators conclude, that if the greateſt mathematicians had been conſulted, with regard to regulating the proportions of the ſeveral apartments in the ark, they could not have done it with more exactneſs than Moſes has done; and the narration in the ſacred hiſtory, in this particular, is ſo far from furniſhing deiſts with weapons to attack its authority, that on the contrary, it ſupplies us with good arguments to confirm it.

ARK *of the Covenant*, among the Jews, a ſmall cheſt made of beaten gold, wherein were contained the golden pot filled with manna, Aaron's rod, and the tables of the covenant.

ARM, *Brachium*, a part of the human body, terminating at one end in the ſhoulder, and at the other in the hand. Anatomiſts divide the arm into two parts, calling only that part the arm included between the ſhoulder and the elbow; the reſt they term the fore-arm. The arm in this acceptation has only one large bone, called the os humeri, or the ſhoulder-bone. The other part conſiſts of two bones, termed the radius, and the cubitus, or ulna.

ARM, in geography, a branch of the ſea, running ſome diſtance into the land.

* ARMADA, (the Spaniſh, defeat of, in the reign of Elizabeth the 30th of July, 1588) Elizabeth having learned the particulars of this formidable armament, which was ſtiled the Invincible Armada, took the neceſſary precautions for giving the Spaniards a warm reception. Having equipped a conſiderable fleet, ſhe created Charles lord Howard of Effingham lord admiral of England; and he was ſent with a ſtrong ſquadron to the weſt, where he was joined by Sir. Francis Drake, appointed vice admiral. She ordered lord Henry Seymour, ſecond ſon to the duke of Somerſet, to cruize along the coaſt of Flanders, with forty Engliſh and Flemiſh ſhips, to prevent the prince of Parma from putting to ſea with his forces. Twenty thouſand men were cantoned along the ſouthern coaſts of England; another body of well diſciplined troops encamped at Tilbury, near the mouth of the Thames, under the conduct of the earl of Leiceſter, whom the queen created general in chief of all her forces; and the Lord Hunſdon commanded a third army, amounting to thirty ſix thouſand horſe and foot, for the defence of her majeſty's perſon. Arthur lord Gray, Sir Francis Knolles, Sir John Norreys, Sir Richard Bingham, and Sir Roger Williams, men renowned for their valour and experience, were conſulted about the management of the war by land. In purſuance of their advice, all the landing-places on the coaſt were fortified and garriſoned, from Hull to the Land's end, and Milford Haven: the militia of the country was armed, and regulated under proper officers, who received inſtructions for interrupting the diſembarkation of the enemy, waſting the country before them, and amuſing them with ſlight ſkirmiſhes and continual alarms, until the army could be aſſembled at the place, in order to give them battle. The queen impriſoned ſome ſuſpected papiſts; ſent new inſtructions to Sir William Fitzwilliams lord deputy of Ireland; and, by her Friends in Scotland, inſtigated James againſt the Roman catholics and the Spaniſh faction. That prince was more afraid than ſhe, of the ſucceſs of ſuch an invaſion, which would have deprived him of his fair ſucceſſion, and expoſed his native kingdom to the arms of a foreign conqueror. The lord Maxwell returning from Spain, landed at Kircudbright where he began to aſſemble troops, as if he had expected the Spaniards would make a deſcent in Galloway. James being informed of theſe practices, marched againſt him with ſuch expedition, that with difficulty he eſcaped in a bark; but was purſued, taken, and impriſoned. Alonzo Perez de Guzman, duke of Medina Sidonia, commander of the Spaniſh Fleet, had ſailed from Liſbon on the twenty ninth day of May; but being overtaken by a ſtorm, the ſhips were diſperſed, though in a few days, they re-aſſembled at Corunna, and in the neighbouring harbours. Effingham, the Engliſh admiral, having received an exaggerated account of the damage received by the Spaniſh navy, ſet ſail towards Spain, with a view to attack

and deſtroy them in their harbours; but the wind ſhifting, he returned to Plymouth, on the ſuppoſition that they might chuſe this favourable gale to enter the Engliſh channel while he was abſent. This was really the caſe: they had probably paſſed him in a fog; for on the very day after his return to port, being the nineteenth of July, the Spaniſh fleet was ſeen off the Lizard, on the coaſt of Cornwall. The admiral forthwith ordered his ſhips to be towed out to ſea, againſt a ſtrong breeze that blew in ſhore; and then he deſcried the Armada ſailing up the channel in line of battle, like ſo many lofty caſtles floating on the boſom of the ſea. He allowed them to paſs, that he might have the advantage of the wind, and diſpatched his brother-in-law Sir Edward Hoby to court for a further ſupply of men and ſhipping. Upon this occaſion many noblemen and people of faſhion, diſtinguiſhed themſelves by fitting out ſhips at their own expence, and engaging as volunteers in the ſervice of their country. Among theſe were the Earls of Oxford, Northumberland, and Cumberland, Sir Thomas and Sir Robert Cecil, and the celebrated Sir Walter Raleigh. On the twenty firſt day of July, the admiral, ſeconded by Drake, Hawkins, and Forbiſher, attacked the rear of the Armada, commanded by John Martinez de Recalde, and maintained the engagement about two hours, pouring in their broad-ſides, and tacking about with admirable dexterity. They did not chuſe to engage the enemy more cloſely, becauſe they were greatly inferior to the Spaniards in the number of ſhips, men, guns, and in weight of metal; nor could they pretend to board ſuch lofty ſhips, without a manifeſt diſadvantage. Nevertheleſs, two Spaniſh Galleons were diſabled and taken. On the twenty third day of July, the duke of Medina Sidonia bore down upon the Engliſh fleet, and both ſides ſtrove for ſome time to gain the weather-gage; at length the battle began, and was fought with great confuſion and various ſucceſs; though the loſs on either ſide was not conſiderable. This engagement was followed by a ceſſation, becauſe the lord admiral could not renew hoſtilities, until he received a ſupply of powder and ammunition. On the twenty fifth, a Portugueſe galleon was taken, notwithſtanding the vigorous efforts of Don Diego, Telles Henriquez, who brought three galeaſſes to her aſſiſtance. On the twenty ſeventh, the Armada anchored before Calais, and were again attacked by the Engliſh fleet, now reinforced, and amounting to one hundred and forty ſhips, well manned and provided for action. The Spaniſh admiral preſſed the duke of Parma for a reinforcement of forty flyboats, that he might be the better enabled to deal with the light Engliſh frigates; and he did not doubt but by this time the Netherland forces were embarked for the deſcent upon England. The duke was not at all prepared to join the Armada. His veſſels were leaky, and deſtitute of proviſions; the greater part of his ſeamen had deſerted; the troops were not yet embarked; and the harbours of Dunkirk and Nieuport were blocked up by a ſquadron of ſhips belonging to Holland and Zealand. After lord Effingham had cannonaded the Armada for ſome time, he prepared eight fire-ſhips; and at midnight ſent them, under the conduct of Young and Prowſe, into the midſt of the enemy, where, being ſet on fire, they produced univerſal terror and confuſion. The duke of Medina Sidonia ordered his captains to ſlip their cables, and put to ſea with all expedition. They practiſed this expedient, but with ſuch diſorder, that they ran foul of each other in the dark; and their whole navy was filled with tumult and uproar. A large galeaſs, commanded by Don Hugo de Moncada, having loſt her rudder, next day ſtruck upon the ſands of Calais, and was, after a very deſperate engagement, taken by three Engliſh captains, who found on board a great quantity of gold, and delivered the veſſel and guns as a perquiſite to the governor of Calais. The Engliſh fleet taking the advantage of the enemy's confuſion, engaged them with great fury, as they endeavoured to re-aſſemble off Gravelines. The engagement began at four o'clock in the morning, and laſted till ſix in the evening. The Engliſh having the advantage of wind and tide, handled them ſo roughly, that thirteen of their beſt ſhips were either ſunk or driven aſhore; one of their galleons was taken, and another fell into the hands of the Zealanders. The duke of Medina Sidonia being driven towards the coaſt of Zealand, held a council of war, in which it was reſolved, that, as their ammunition began to fail, their ſhips had received great damage, and they deſpaired of being joined by the duke of Parma, they ſhould return to Spain, by ſailing round the Orkneys, the Hebrides, and the iſland of Ireland. Accordingly they proceeded to the northward, and were followed by the Engliſh Fleet as far as Flamboroughhead, where they came up with the Fugitives; and the Spaniſh admiral, intimidated by the proſpect of a long and dangerous voyage, would have ſurrendered, had he been attacked by the Engliſh navy. But, a council being called by lord Effingham to regulate the particulars of the engagement, it appeared upon enquiry that their ammunition was almoſt exhauſted; ſo that they were obliged to let the Spaniſh fleet proceed on their voyage, while they returned to the Downs. That very night the Armada was terribly ſhattered in a ſtorm. Seventeen of the ſhips, having five thouſand men on board, were afterwards caſt away upon the weſtern Iſles, and the coaſt of Ireland. Some were wrecked on the rocks of Norway, and many periſhed by fire, and other accidents. Seven hundred Spaniards landing in Scotland, were treated with humanity by James; and, with the conſent of Elizabeth, ſent over to the duke of Parma in the Netherlands; but thoſe who got aſhore in Ireland, were butchered by the natives, or the lord deputy. Of the whole Armada, three and fifty ſhips only returned to Spain, in a miſerable condition; and the commanders imputed their ill ſucceſs to their not being joined by the duke of Parma, and their being too ſeverely reſtricted to the letter of their inſtructions.

ARMADILLO, in natural hiſtory, an animal reſembling a hedge-hog, and almoſt of the ſame ſize. His head, body, and tail, are covered with a ſhield of a bony ſubſtance, and very curiouſly contrived with moſt beautiful ſcales. The head is like a hog's, with a ſharp ſnout: it has little eyes ſunk deep in the head, and a pointed narrow tongue. The ears are naked, brown, and ſhort: the teeth are of a middle ſize, and eighteen in each jaw. The feet reſemble hands, with five fingers, and roundiſh nails. He roots up the ground with his ſnout, like a hog; and is tinctured all over with a reddiſh colour. The tail at the root is near four inches thick; but grows leſs gradually to the end, which terminates in a point. He lives upon melons, potatoes, and other roots; and will eat fleſh when he can get it. He generally lies hid in the ground, and ſometimes will frequent water and watery places, where he feeds upon worms, ſmall fiſh, and water inſects. Sometimes he will eat ants, apples, and the berries of certain trees. There are three ſorts of theſe Animals mentioned by naturaliſts, viz. that of the Caribbee Iſlands, the African, and the weaſel-headed, or the Tatu; but they do not differ very much from one another. See plate V. *fig.* 5.

* ARMENIA, a country of Aſia, partly ſubject to the Turks, and partly to the Perſians. It is divided into the Great and Small. Great Armenia has Georgia on the north, from which it is ſeparated by high mountains. The river Euphrates on the weſt; Diarbeker, Curdiſtan, and Aderbijan, on the ſouth; and Shirvan on the eaſt. The chief towns in that part of Armenia belonging to Turky, are, Arzum the capital, near the ſprings of the Euphrates, and a great thoroughfare for the caravans between Turky and Perſia; Kars, a ſtrong city, Bayazid, a republic of Hurds, near Mount Ararat; Baha, another republic of the ſame; and Van or Wan, on the lake Van, the head of a government of the ſame name, with other towns of leſs note. That part of Armenia which is ſubject to Perſia, is chiefly contained in the province of Aran, in which are ſeveral fine towns, as Erivan or Rivan, the capital of the whole. Ganjals, one of the fineſt cities in Perſia, Kapan on the ſouth ſide, near the Aras; beſides Nakchivan, Aſtabad, Julfa, Ordabad, Baylakan or Pilkan, on the Aras; Berdah and Shilkah, on the Kur.

The country, in general, is full of mountains and vallies, lakes and rivers, particularly the country about Erivan is admirably fine, being full of rivulets, which render it extremely fruitful. Beſides great quantities of all ſorts of grain, here are fields of a prodigious extent covered with tobacco, which came originally from America; the reſt of the country produces rice, cotton, flax; melons, and grapes; in ſhort, there is nothing wanting but olives, which ſhews that the ark could not reſt on mount Ararat, becauſe the dove brought an olive-branch in her mouth, and this tree never leaves a place where it once grew. The Armenians are an honeſt, civil, polite people; but not fond of fighting; for they ſcarce trouble themſelves about any thing elſe but trade, which they carry on in moſt parts of the world. The religion of the Armenians is the Chriſtian, of the Eutychian ſect, that is, they own but one nature in Jeſus Chriſt; and when they ſpeak of the hypoſtatical union, they ſay, that he is perfect God and perfect man without mixture.

The Armenians have ſeven ſacraments, baptiſm, confirmation, penance, the euchariſt, extreme unction, orders, and matrimony. In baptiſm, the child is plunged three times into the water, and the ſame form of words that is uſed with us, is repeated every time. The women do not go to church till forty days after their delivery; and they obſerve many Jewiſh cuſtoms. At the communion, to which infants of two or three months old are admitted, the prieſts give a piece of the conſecrated hoſt, ſoaked in the conſecrated wine. The Armenians ſeem to place the chief part of their religion in faſtings and abſtinences; and among the clergy, the higher the degree, the lower they muſt live; inſomuch that it is ſaid, the archbiſhops live on nothing but pulſe.

ARMILLA-MEMBROSA, in anatomy, that circular ligament which comprehends all the tendons belonging to the whole hand within a circle, in the region of the carpus.

ARMILLARY, in a general ſenſe, implies ſomething compoſed of rings or circles.

The word is derived from *armilla*, a bracelet.

ARMILLARY *Sphere*, an artificial ſphere compoſed of a number of circles of the mundane ſphere, put together in their natural order, to eaſe and aſſiſt the imagination, in conceiving the conſtitution of the heavens, and the motions of the celeſtial bodies. See plate IV. *fig.* 2. The armillary ſphere revolves upon its axis within a ſilvered horizon, which is divided into degrees, and moveable every way upon a braſs ſupporter. The other parts are the equinoctial, zodiac, meridian, the two tropics, and the two polar circles.

ARMISTICE, in military affairs, a temporary truce, or a ceſſation of arms for a very ſhort ſpace of time.

The word is compounded of *arma*, arms, and *ſto*, to ſtand, or ſtop.

ARMOSIN, a kind of ſilk ſtuff, manufactured in the Eaſt-Indies, at Lyons in France, and at Lucca in Italy.

ARMORIAL, relating to arms, or coats of arms.

ARMORY, a magazine of arms, or a place where military habiliments are depoſited, that they may be ready for uſe.

ARMOUR, ſuch habiliments as ſerve to defend the body from wounds, eſpecially thoſe given by darts, ſwords, lances, &c.

ARMOURER, one who makes or deals in arms or armour.

ARMS, *Arma*, in a general ſenſe, all kinds of weapons, whether offenſive or defenſive.

ARMS, in a legal ſenſe, extend to any thing a perſon wears for his own defence, or takes in his hand, and uſes in anger, to ſtrike or throw at another.

ARMS, or ARMORIES, in heraldry, marks of honour borne upon ſhields, banners, and coats, to diſtinguiſh ſtates, families, and perſons.

Charged ARMS, ſuch as retain their ancient integrity, with the addition of ſome new honourable bearing.

Canting or *Vocal* ARMS, thoſe in which there are ſome figures alluding to the name of the family.

Full or *Intire* ARMS, ſuch as retain their primitive purity, without any alterations or abatements.

ARMY, a large number of ſoldiers, conſiſting of horſe and foot, completely armed, and provided with artillery, ammunition, &c. under the command of one general, with proper officers under him. An army is compoſed of ſquadrons and battalions, and is uſually divided into three corps, and formed into three lines. The firſt is called the van-guard, the ſecond the main body, and the third the rear-guard.

* ARNO, a river of Tuſcany, which riſes in the Apennine mountains, runs through Florence and Piſa, and falls into the Mediterranean a few leagues below Piſa. The valley through which it runs is exceeding pleaſant, and abounds with all manner of fruits. The late duke of Dorſet wrote an elegant little ſonnet on Arno's Vale, or Valley.

AROMATIC, an epithet applied to ſuch plants and other bodies as yield a fine fragrant ſmell, and have a warm ſpicy taſte.

ARPENT, a term ſometimes uſed to denote an acre.

Battle ARRAY, the order or diſpoſition of an army drawn up to engage the enemy.

ARREARS, the remainder of a ſum due, or money remaining in the hands of an accountant. It likewiſe ſignifies the money due for rent, wages, &c.

ARREST, the apprehending and ſeizing a perſon, to oblige him to be obedient to the law; which in all caſes, except treaſon, felony, or breach of the peace, muſt be done by virtue of a precept out of ſome court. See WRIT.

ARREST *of Judgment*, the aſſigning juſt reaſon why judgment ſhould not paſs, as want of notice of the trial; a material defect in the pleading, when the record differs from the deed impleaded; when perſons are miſ-named; where more is given by the verdict than is laid in the declaration, &c. This may be done either in criminal or civil caſes.

ARRESTS, in farriery, mangy tumours between the ham and the paſtern of a horſe's hind legs.

ARRIERE, the hinder or poſterior part of any thing. See REAR.

ARROW, a miſſive weapon, ſharp-pointed and barbed. See BOW.

ARROW, among ſurveyors, a ſmall ſtick generally ſhod with iron, to ſtick into the ground at the end of the chain.

ARSCHIN, in commerce, a long meaſure uſed in China to meaſure ſtuffs. Four arſchins make three Engliſh yards.

ARSENIC, a poiſonous mineral ſubſtance, frequently found mixed with other matters.

The chemiſts have formed various conjectures about the nature of this ſingular concrete; but have not been able to determine what it really is, or to what claſs of bodies it belongs. Stahl ſuppoſes it to be of a ſaline nature. In ſome of its ſtates, it apparently poſſeſſes properties attributed to ſalts alone; but in other ſtates it is as obviouſly metallic.

Arſenic is employed by the dyers, as an ingredient in the compoſitions of ſcarlet and other fine reds; by the girdlers and pin-makers, for whitening their braſs or copper; by the goldſmiths, for enamelling; by the glaſs-makers, for promoting the fuſion of the fritt, and the clearneſs and tranſparency of the glaſs; by the porcelane-makers, in white glazings; by the preparers of compound metals, for communicating a ſilver whiteneſs to copper; by the aſſayers, it is uſed in the form of glaſs, for promoting the ſcorification of refractory ores, which participate of tin and antimony, and which will not work off, but run into lumps in the cupel.

Arſenic is uſed alſo in ſolders, or for uniting iron with tin, in ſome places in making tinned iron plates. Arſenic is a moſt violent poiſon to all animals; unleſs the wolf ſhould be an exception, who is ſaid to be only purged by it. The utmoſt caution is therefore neceſſary, in all operations upon arſenic, to avoid its fumes: it is on account of the danger attending its operations that this mineral has hitherto been ſo little examined by the chemiſts. The deſtroying of rats, or other domeſtic animals, by means of arſenic, is full of danger; the operation of the poiſon being ſuch, that great part of it is diſcharged, and the animal induced to drink: hence foods, liquors, and the provender of cattle, have too often received a poiſonous taint. If we cannot catch thoſe animals, we may nevertheleſs be cleared from them by much ſafer means than the uſe of arſenic: freſh night-ſhade is their enemy.

With regard to the effects of arſenic in the human body; a nauſea, ſickneſs, and reaching commonly enſue in about half an hour after taking it, followed by violent vomiting, hiccups, and pains in the ſtomach and bowels: convulſions and palſies of the limbs preſently ſucceed, with intenſe heats, cold ſweats, palpitations of the heart, extreme anxiety, reſtleſsneſs, proſtration of ſtrength, thirſt, and dryneſs of the mouth and throat, loſs of reaſon, and at laſt death. Several ſubſtances have been produced as antidotes to this poiſon. Thoſe who imagine arſenic to be an alkali, recommend acids; and thoſe who imagine it a corroſive acid, direct alkalies for counteracting its effects: but arſenic is apparently neither one nor the other. If rock cryſtal, or bezoar, or the roots of the elder-tree, by ſome ſtrongly recommended, have ſeemed to do ſervice where arſenic had been taken; it was not on thoſe ingredients, but on the oils or fats uſed along with them, that the good effects of the medicine depended. Oils, fats, warm fat broths, freſh butter, milk, taken plentifully and repeatedly, are the only antidotes, both for obtunding the force of the arſenic, and promoting its diſcharge by vomit. If the vomiting does not freely ſucceed by the liberal uſe of theſe kinds of ſubſtances, ſome mild emetic muſt be added; the expulſion of the poiſon being a principal point. The more threatening ſymptoms being thus removed, oily clyſters, and a gentle laxative, are neceſſary, to obtund and evacuate ſuch part of the arſenic as may have paſſed into the inteſtines; after which, the ſtrength is to be recruited by proper analeptics.

Caſes frequently happen in which we are called upon to determine whether a particular ſubſtance be arſenic or not; as when powdery matters are found in the ſtomach of thoſe who are ſuſpected to have died by poiſon. Arſenic, in a ſolid form, may be diſtinguiſhed by its yielding, in the fire, white fumes, and a garlic ſmell; and by its whitening copper. This laſt trial is moſt commodiouſly made, by placing a little of the powder betwixt two clean poliſhed copper-plates, binding the plates firmly together with wire, cloſing the juncture all round with a good lute, and then heating them red-hot. We may try alſo whether any reguline or ſemimetallic matter is obtainable, by means of tartar and ſuet.

The principal preparations of arſenic are, fixed arſenic, and the arſenical magnet. Fixed arſenic is made by gradually injecting powdered arſenic into melted nitre, commonly in the proportion of one part of the former to two of the latter. When the ebullition is over, the crucible is covered, the matter kept melted for a little time with a ſtrong fire, and afterwards edulcorated with water. The arſenical magnet is a mixture of equal parts of pure white arſenic, ſulphur, and antimony, reduced ſeparately into fine powder; then mixed, put into a glaſs body ſet in ſand in a crucible, and urged with a very gradual fire, till the matter is melted into a red vitreous maſs reſembling a deep garnet or ruby. We muſt be cautious in handling this arſenical glaſs, as a wound received from it may be dangerous.

Pure cryſtalline white arſenic is never found native in the earth. A powdery white arſenic is now and then met with in ſome of the Bohemian and Saxon mines; though even this ſeems to be not a natural arſenic, but to have been ſeparated and ſublimed from the ores, by the wood fires made in the mines for burſting the maſſes of ore. It is obſervable, that Saxony, of all countries in the world, is the richeſt in arſenical ores; and that the richeſt ſilver ores abound with arſenic. *Newmann's Chemiſtry.*

ARSMART, in botany, the name of ſeveral ſpecies of perſicaria. See PERSICARIA.

ART, *Ars*, a ſyſtem of rules ſerving to facilitate the performance of certain actions; in which ſenſe it ſtands oppoſed to ſcience, or a ſyſtem of ſpeculative principles.

Arts are uſually divided into liberal and mechanical; the former comprehending poetry, painting, ſculpture, architecture, &c. and the latter the whole body of mechanical trades, as carpentry, maſonry, turnery, &c.

ART and PART, in the law of Scotland, is applied to an accomplice.

ARTEMESIA, mugwort, in botany, the name of a plant, which is perennial, grows wild in the fields and waſte grounds, and flowers in June. This plant has been chiefly recommended for promoting the uterine evacuations, and abating hyſteric ſpaſms; for which purpoſe infuſions of it have been drank as tea, and uſed as a bath. It appears to be one of the mildeſt of the ſubſtances made uſe of in ſuch intentions; and may perhaps be of ſervice in ſome caſes, where medicines of more activity would be improper.

* ARTEMISIA, queen of Caria, the ſiſter and wife of Mauſoleus, immortalized herſelf by the honours ſhe paid to the memory of her huſband, by building for him, at Halicarnaſſus, a tomb called the Mauſoleum, which was one of the ſeven wonders of the world, from which the title of Mauſoleum was afterwards given to all tombs remarkable for their magnificence. Artemiſia ſurvived her huſband about two years, and died of grief about the end of the one hundreth and ſixth Olympiad, three hundred and fifty one years before the Chriſtian æra. Artemiſia's grief did not, however, prevent her attending to the ſafety of her dominions. The Rhodians had formed the deſign of dethroning her, upon which ſhe carried on a war againſt them, and having at length beſieged and taken their city, erected within the walls two brazen ſtatues, one repreſenting Rhodes dreſſed in the habit of a ſlave, and the other of Artemiſia branding her with a hot iron.

ARTERIAL, in anatomy, any thing belonging to, or that performs the office of, an artery.

ARTERIAL *Vein*, in anatomy, a name given to the pulmonary artery.

ARTERIOTOMY, the opening an artery in order to procure an evacuation of blood.

The term is compounded of two Greek words ſignifying an artery, and to cut.

ARTERY, in anatomy, a conical tube or canal, which conveys the blood from the heart to all parts of the body. The arteries of the human body are, ſtrictly ſpeaking, only two, namely, the aorta, and the pulmonary artery; all the other arteries, tho' diſtinguiſhed by proper names, being only branches of theſe two. The aſcending aorta, which ariſes immediately from the left ventricle of the heart, preſently after gives two arteries, called coronary ones, to the heart itſelf. A little above this it is divided into three aſcending branches, from which are formed the two carotids, and the two ſubclavians; and from theſe laſt proceed the muſcularis colli, the external ſcapulary artery, the ſuperior intercoſtals, the mediaſtinal artery, the ſuperior diaphragmatic artery, the mammary artery, and the axillary arteries: all which are ſubdivided into leſſer branches.

From the deſcending trunk of the aorta, proceed in the following order, the bronchil artery, the inferior intercoſtals, the arteries of the œſophagus, the interior diaphragmatics, the cœliac, ſuperior meſenteric, the renal or emulgent arteries, the ſacra, and two iliacs. Theſe are the main branches ſent out from the deſcending aorta, each of which is again ſubdivided into many leſſer branches.

Rough ARTERY, or aſpera arteria. See ASPERA ARTERIA.

ARTHANITA, ſowbread, in botany, a low plant, without any other ſtalk than the ſlender pedicles of the leaves and flowers. It is perennial, a native of the ſouthern parts of Europe, and cultivated in ſome of our gardens. The freſh roots of arthanita have a nauſeous, acrid, biting taſte, and no remarkable ſmell: by drying, their acrimony is greatly abated; by long keeping, it is almoſt deſtroyed; though after they have loſt ſo much as to make very little impreſſion on the organs of taſte, they ſtill betray, when taken internally, a great degree of irritating power. Dried and powdered, they have been given in doſes of a drachm, and found to operate as a ſtrong, inflammatory, yet ſlow cathartic. The juice is ſaid to purge ſtrongly when applied externally to the belly: and the juice or bruiſed root to be of great efficacy for ſoftening and diſcuſſing indolent and ſcrophulous tumours. The flowers are of a different nature, having a moderately ſtrong and very pleaſant ſmell, and little other than a mucilaginous taſte: they have been uſed medicinally, and the uſe of the roots is now, among us, in great meaſure laid aſide. *Lewis's Hiſtory of the Materia Medica.*

ARTHRITIS, in medicine, a diſeaſe, well known by the appellation of the gout. See GOUT.

The word is derived from the Greek, and ſignifies a joint; the chief ſeat of that diſtemper being in the joints.

* ARTHUR, duke of Brittany, ſon of Geoffrey Plantagenet, who was the fourth ſon of Henry II. king of England, and of Conſtantia, daughter of Conon, duke of Brittany, and earl of Richmond, was born after his father's death, on the 31ſt of March, 1187. In right of his mother he was heir apparent to the dukedom of Brittany, and to many lordſhips; and king Richard had ſo great a reſpect to the right of ſucceſſion, that in the year 1190, in a letter to the pope, he declared his nephew Arthur his heir, in caſe he died without iſſue by his queen. Yet, in 1199, when he was mortally wounded before the caſtle of Chalus, he deviſed to his brother John the kingdom of England, and all his other dominions; on which he was declared king, while Arthur was ſolemnly received by the French king, who took him under his protection. After many acts of hoſtility on both ſides, Arthur was taken priſoner by king John in 1202, and confined in the caſtle of Falaiſe, under the cuſtody of Hubert, where the king went to him, and treated him very gently; but the young prince, who was then ſcarcely fifteen, inſiſting that he was heir to the crown of England, the king was ſo enraged, that he cauſed him to be removed to the caſtle of Rouen, where he was confined more cloſely than ever, and reſolved to have his eyes put out, and farther, deprived of the power of getting children: however he was diſſuaded from this barbarous deſign, either by his chamberlain Hubert, or by his mother queen Eleanor; but it has been always ſtrongly ſuſpected that he cauſed him to be murdered, for preſently duke Arthur diſappeared, and was never heard of afterwards.

* ARTHUR, king of the Britons, is ſaid to have been the ſon of Uther Pendragon, king of Britain, and to have been born in 501. His life is a continued ſcene of wonders. It is ſaid that he killed four hundred and ſeventy Saxons with his own hand in one battle; and having ſubdued many mighty nations, and inſtituted the order of the Knights of the Round Table, died A. D. 542.

ARTICHOKE, *Cynara*, in botany, a well-known plant, cultivated in gardens. It requires, ſays Miller, a rich, deep, and moiſt ſoil, thoroughly dug ſeveral times over, and mixed with plenty of well rotted dung, to the depth of at leaſt three feet; for the deeper the mould is, the leſs watering they will require in the ſummer, and the larger and better flavoured their fruit will be in autumn. They may be raiſed from ſeeds: but the uſual and moſt expeditious way of propagating them is by ſlips, or ſuckers, taken from the old roots in February or March, or as ſoon as the hard froſts are over. Theſe ſuckers ſhould be taken off with ſome fibres to them; and if they are planted in a well prepared ſoil, like the abovementioned, they will yield the next autumn.

The time for taking off theſe ſuckers is alſo the proper ſeaſon for dreſſing the old ſtocks; which is performed thus: After all the earth has been removed from about the ſtock, down to below the part from which the young ſhoots are produced, two, or at moſt three, of the cleareſt, ſtraighteſt, and moſt promiſing of theſe ſhoots, iſſuing from the under part of the ſtock, are choſen for a crop. Theſe are far preferable to the ſtrong thick ſhoots that generally ſpring up from the crown of the roots, with woody ſtems, which never produce good or regularly ſcaled fruit. The gardener then (having previouſly taken off the ſuckers intended for planting elſewhere, in doing of which care muſt be taken not to injure the plants intended to remain) forces off, with his thumb, all the other buds and young ſhoots, cloſe up to the head of the ſtock; ſeparates the young plants that are left, as far aſunder as he can, without breaking them; draws the earth up to them with a ſpade; preſſes it down cloſe around them with his hands; and then pulls off the tops of the leaves which hang down.

Toward the end of April, or beginning of May, when the plants begin to fruit, all the young ſhoots, produced from their roots or ſtems ſince the dreſſing, muſt be pulled up or cut off, ſo as to leave only the principal head, which will by that means bear a fine large fruit. When the artichokes are fit to gather, their ſtems muſt be cut down cloſe to the ground, in order that the ſtocks may make ſtrong freſh ſhoots before the end of October, which is the uſual ſeaſon for earthing them up, or as the gardeners term it, landing them: though this may be deferred till any time in December, if the weather proves mild.

This earthing of them conſiſts in cutting off all the young ſhoots quite cloſe to the ground, then digging a trench between each row, and covering the ſtocks with the earth thrown up, in ſuch manner, that they may be, as nearly as poſſible, under the middle of the ridge.

The plants, thus earthed up, will not require any farther care before the end of February, or beginning of March, by which time they will have grown through the ridge of mould; and this, if the weather be proper, is the ſeaſon for dreſſing their roots as before directed.

Though the ſtocks of artichokes will laſt ten, or even fifteen years, in a rich and deep ſoil; yet, as they are great impoveriſhers of the ground, their fruit will dwindle, ſo as to render it moſt adviſeable to renew the whole plantation every fourth or fifth year, or, perhaps, rather every ſecond or third, by ſlips or ſuckers, which ſhould be planted in rows as ſtraight as poſſible, and at the diſtance of two feet from each other, four inches deep, with the earth cloſed very faſt to their roots, and if the ſeaſon proves very dry, they ſhould be watered twice or thrice a-week, till they have taken good root.

If any of the artichokes, thus planted in the ſpring, ſhould not produce fruit in the autumn, they may be made to yield it in the winter, or early the next ſpring, by tying up their leaves at the time of earthing up their roots, heaping up mould around till only their tops are ſeen, and then covering thoſe tops with a little ſtraw, or peas haulm, to defend them from froſt.

The kitchen gardeners near London, who endeavour to make the moſt of every inch of their high-rated land, generally plant their rows of artichokes nine or ten feet aſunder; and, beſides ſowing between them radiſhes or ſpinage, they plant two rows of cauliflowers, at the diſtance of two feet and a half from each other in the rows, and of four feet from row to row; ſo that full five feet are allowed for the artichokes. In May, when the crop of radiſhes or ſpinage is taken off, they ſow along the middle of the ſpace between the two rows of cauliflowers, a row of cucumbers for pickling, at the diſtance of every three feet; and between the cauliflowers and the artichokes they plant, for winter uſe, a row of cabbages or ſavoys, which have room enough to grow after the cauliflowers and artichokes are taken off. Thus the ground is fully cropped during the whole ſeaſon.

A moiſt rich ſoil always yields the largeſt and beſt artichokes; but if it be very moiſt, the roots will not live through the winter.

The two ſorts of artichokes, commonly cultivated in this country, are the globe and the French. The former, which has by far the moſt fleſhy leaves, the thickeſt bottom, and the beſt taſte, is deſervedly preferred. It is alſo the largeſt. The ſcales of this ſort are brown, and turn inward. The French artichoke is more conical, its ſcales are narrower, of a greener colour, and frequently turned outward, and it has a diſagreeable perfumed flavour.

The bottoms of artichokes are good for many culinary uſes. The way to preſerve them all the winter is, to ſeparate them from the leaves, parboil them, and hang them up in a dry place, ſtrung on packthread, with a clean piece of paper between every bottom, to prevent their touching one another. They are likewiſe ſaid to be very good pickled.

M. de Chateauvieux has raiſed moſt excellent artichokes in the open field, without dunging the ground at all, or even watering the plants; but ſolely by a judicious execution of the principles of the new huſbandry: ſo great are the benefits which accrue from a thorough ſtirring of the earth! Artichokes which he planted at the end of May, produced in September their firſt fruits, which were, in general, from twelve to fifteen inches in circumference. Their leaves covered entirely beds ſix feet wide, in which they were planted. *Mills's Huſbandry.*

Jeruſalem ARTICHOKE, the root of a ſpecies of the ſun-flower of the perennial kind, and propagated in ſome gardens for the uſe of the kitchen. It is a very agreeably taſted root, but watery and windy, and therefore generally diſregarded. It is propagated by planting out the ſmall roots, or even pieces of the larger, which have buds to them, in the ſpring or autumn. They muſt be allowed a very conſiderable diſtance, for they ſpread immoderately, and multiply very quick.

The autumn following, when their ſtems decay, the roots may be taken up for uſe. It is an unſightly plant, though very tall, and therefore placed in the obſcure corners of a garden. *Miller's Gardener's Dict.*

ARTICLE, a ſmall part of a book, writing, account, treaty, or the like.

ARTICLE, in anatomy, the juncture of two bones deſigned for motion.

ARTICLE, in arithmetic, denotes any number that can be divided into ten equal parts, as 10, 20, 30, &c.

ARTICLE, in grammar, a particle uſed in moſt languages for expreſſing the ſeveral caſes and genders of nouns, where different terminations are wanting to ſupply that office. Articles are of the utmoſt uſe in a language, as by their aſſiſtance general appellations are rendered particular. We are ſurrounded with ſuch an amazing multiplicity of objects, that it would be impoſſible to give each a proper name, and conſequently general terms became neceſſary. But general terms could never anſwer the intention of conveying our ideas to each other by words or writing, unleſs we had ſome method of confining thoſe general terms to particular objects. This is the office of the article; and this it fully performs.

ARTICLE *of Faith*, a point of religious doctrine, allowed and received by ſome church, as having been revealed from heaven.

ARTICLES *of Religion*, the thirty-nine heads of the proteſtant faith, drawn up by the biſhops Cranmer, and Ridley, and publiſhed by regal authority in the reign of Edward the ſixth.

There has lately been an attempt made to annul the whole, or the major part of theſe articles; which attempt has not yet been crowned with ſucceſs, though the promoters of it are numerous and powerful.

ARTICULATE *Sounds*, ſuch as expreſs the letters, ſyllables, or words of any alphabet or language; ſuch as are formed by the human voice.

ARTICULATED, furniſhed with, or conſiſting of, joints.

ARTICULATION, in anatomy, implies the juncture of two bones intended for motion.

Articulation is of two kinds, diarthroſis and ſynarthroſis; the former being that which admits of a manifeſt motion, and the latter that which allows only of an obſcure motion.

ARTIFICER, one whoſe employment it is to manufacture any kind of commodity, as iron, braſs, wood, wool, linen, &c. ſuch as ſmiths, braziers, carpenters, weavers, ſpinners, &c.

ARTIFICIAL, made, faſhioned, or produced by art, in contradiſtinction to the productions of nature.

ARTILLERY, ordnance of all ſorts, with their various appurtenances; as cannons, mortars, petards, muſquets, carbines, &c. See CANNON, MORTAR, &c.

ARTILLERY-PARK, a place generally in the rear of an army for encamping the artillery.

The artillery is drawn up in lines, of which one is formed by the ordnance: the ammunition waggons make two or three lines, ſixty paces behind the ordnance, and thirty diſtant from one another: the pontoons and tumbrils compoſe the laſt line. The whole is ſurrounded with a rope, which forms the park; the gunners and matroſſes encamp on the flanks; and the bombardeers, pontoon-men, and artificers in the rear.

Train of ARTILLERY, a certain number of pieces of ordnance mounted on carriages, with all their furniture, and every thing neceſſary for marching.

ARTILLERY-COMPANY, a band of infantry, conſiſting of ſix hundred men, forming part of the militia or city guard of London.

ARTIST, a perſon ſkilled in ſome art.

ARVAL BROTHERS, *Arvales fratres*,

in antiquity, a college of twelve prieſts, inſtituted by Romulus, who preſided over the ambervalia, or ſacrifices annually offered to Bacchus and Ceres.

They held their aſſemblies in the temple of Concord, and wore on their heads a crown compoſed of the ears of corn, tied together with a white ribbon. Some add, that they were entruſted with the authority of determining the limits of lands and inheritances.

ARUM, wake-robin, or cuckow-pint, in botany, a low perennial plant, growing wild under hedges and by the ſides of banks. Arum root, newly dried and powdered, is given in doſes of a ſcruple and upwards, for ſtimulating the ſolids, attenuating viſcid juices, and promoting the natural ſecretions; in cold, languid, phlegmatic habits; againſt weakneſs and relaxations of the ſtomach, and catarrhous and rheumatic diſorders. It has been generally given in conjunction with other materials, to ſome of which the effects of the compound may be in great part aſcribed: thus in the officinal powders of arum, ſixteen grains of the dry root are accompanied with eight grains of the pungent roots of pimpinella, the ſame quantity of thoſe of the yellow water-flag, (or of calumus aromaticus) four grains of cinnamon, (or ſix of canella alba) and two grains of ſalt of wormwood, (or of vitriolated tartar) with four grains of crabs-eyes. In the medicine recommended by Sydenham againſt rheumatiſms, the acrid antiſcorbutic herbs are largely joined to it.

Though ſpirituous liquors are incapable of diſſolving or extracting the active matter of the arum, they ſeem nevertheleſs, when given along with the dried root as a vehicle, to promote its action. Juncker obſerves, that a drachm of the powder, taken with a ſpoonful of brandy, procures a very copious ſweat, even in perſons little diſpoſed to that evacuation; while the powder, by itſelf, has no ſuch effect. *Lewis's Hiſtory of the Materia Medica.*

ARUNDELIAN *Marbles*. See MARBLE.

ARUSPICES, in antiquity, an order of prieſts among the Romans, that pretended to foretel future events, by inſpecting the intrails of beaſts killed in ſacrifices.

ASA, or ASSA, in the materia medica, an epithet applied to two very different ſubſtances, called aſa-dulcis, and aſa-fœtida.

ASA-DULCIS, the ſame with benzoin. See BENZOIN.

ASA-FOETIDA, a kind of gum, of a very offenſive ſmell, produced by a plant common in ſome parts of Perſia.

Kæmpfer is the author to whom we owe the true account of it. This is given in his Amœnitates Exoticæ, where he deſcribes it fully and accurately, under the name of umbellifera leviſtico affinis foliis inſtar pæoniæ ramoſis, caule pleno maximo, ſemine foliaceo nudo ſolitario brancæ urſinæ ſive paſtinachæ ſimili radice aſam fœtidam fundente. The Perſians call both the plant and the juice hingeſch; and the Indians, hiing; but the more accurate in both countries call the plant hingeſch, and the juice or gum hiing.

The root within it is perfectly white, and full of white, milky, and ſtinking juice, which, when collected and dried, is what the Perſians call hiing, and the Europeans aſa-fœtida.

It grows in Perſia, but there only in two places, at leaſt in thoſe only in any great plenty. Theſe are the mountains about Heraat, and the province of Laar. In theſe places it abounds with juice, and yields the gum in great plenty; when found elſewhere, it yields very little. The leaves in theſe places are of a horrible, offenſive ſmell, and no animal will touch them: but the people of the town of Diſguum affirm, that, in the country beyond them, the plant loſes much of its bad ſmell, and that the goats feed very greedily on the leaves, and grow fat upon the diet. It is very ſingular in this plant, that it ſeldom flowers, ſometimes not till its twentieth, thirtieth, or even fortieth year; during all this time the root is increaſing in ſize, and, conſequently, it ſometimes grows to an enormous bulk: roots of it have been ſeen of the thickneſs of a man's thigh, and of a yard and a half in length; thoſe of the thickneſs of one's arm are frequent. When it ſends forth a ſtalk, and has ripened its ſeed, it periſhes. The ancients made a diſtinction in their ſilphium, as it was produced from the ſtalk, or from the root of the plant; but, at this time, all that we have is obtained from the root. They never make inciſions in roots of leſs than four or five years ſtanding; and they always find, that the older and larger the root, the more plentifully the juice flows.

The moſt ſtrongly ſcented aſa-fœtida is always eſteemed the beſt; and Kæmpfer obſerves, that it is ſo much ſtronger, when freſh, than when kept and imported into Europe, that a drachm of it has more ſcent than an hundred weight of what our druggiſts keep.

It is by much the ſtrongeſt of the deobſtruent warm fœtid gums; and is given not only againſt hyſterical complaints, flatulent colics, and obſtructions of the breaſt; but in moſt nervous diſorders, in which it frequently acts as an antiſpaſmodic, and an anodyne: in ſome caſes muſk, and in others opium, are uſefully joined with it. Hoffman recommends it as one of the moſt powerful anthelmintics hitherto known. It is moſt commodiouſly taken in the form of pills, from a few grains to a ſcruple or half a drachm. It loſes both its ſmell and ſtrength with age; a circumſtance neceſſary to be attended to in proportioning the doſes neceſſary to be given in order to procure the intended effect.

* ASAPH (St.) a city and biſhop's ſee, in Flintſhire, on which account it is taken notice of: it is ſo poor and wretched a place it would not otherwiſe be worth mentioning. It has a market on Saturdays; and four fairs, on Eaſter-Tueſday, July 15, October, and December 26, for cattle. It is two hundred and twelve miles north-weſt of London, and twenty-four, weſt-north-weſt of Cheſter, long. 3 25, W. lat. 53. 18. N.

ASARUM, aſarabacca, in botany, a low plant without ſtalks. It is perennial and ever-green, a native of the ſouthern parts of Europe and the warmer climates, and raiſed here in gardens. The dried roots have been generally brought from the Levant; thoſe of our own growth being ſuppoſed of weaker virtue. The roots given in ſubſtance, in doſes of a ſcruple or more, prove ſtrongly emetic and cathartic. The leaves have the ſame effect, but their doſe or degree of ſtrength has not been preciſely determined; ſome ſay they are of more activity than the roots. Its principal uſe among us is as an errhine. The root is one of the ſtrongeſt of the vegetable ſubſtances commonly employed in this intention: a grain or two ſnuffed up the noſe, procure a large evacuation of mucus, both from the mouth and noſtrils, without provoking ſneezing, like the white hellebore root, or diſcovering any remarkable irritation. Geoffroy relates, that after ſnuffing up a doſe of this errhine, he has obſerved the ſalutary diſcharge to continue for three days ſucceſſively, and that he has known a paralyſis of the mouth and tongue cured by one doſe. He recommends this medicine in ſtubborn diſorders of the head proceeding from viſcid matters, in palſies, and in ſoporific diſtempers. During its operation the patient muſt carefully avoid the cold, which is apt to produce puſtules, inflammations, and ſwellings of the face, and ſometimes more alarming ſymptoms. This herb is the principal ingredient in the cephalic, or ſternutatory powders of the ſhops: ſome take equal parts of dried aſarum, and marjoram leaves; others equal parts of the dried leaves of aſarum, marjoram, and marum ſyriacum, and dried lavender flowers. The empyrical herb ſnuffs have likewiſe the leaves of aſarum for their baſis; but often mixed with ingredients of a more dangerous nature.

ASCARIDES, in medicine, a ſpecies of worms, very ſlender, found in the inteſtinum rectum, chiefly of children, and frequently voided with the fœces. They often adhere to the fundament, and are ſometimes even pendent from it.

ASCENDANT, or ASCENDING *Line*, in genealogy, is underſtood of anceſtors, or ſuch relations as are nearer the root of the family.

ASCENDANT, in aſtrology, the horoſcope, or that degree of the equator which is riſing above the horizon in the eaſt, at the time of the birth of any perſon.

ASCENDING, in aſtronomy, is applied to ſuch celeſtial objects as are riſing above the horizon, in any parallel of the equator.

ASCENDING *Latitude of a Planet*, the latitude of a planet moving towards the north-pole.

ASCENDING *Node*, that point of a planet's orbit where it paſſes the ecliptic, in its motion towards the north. See NODE.

ASCENDING *Signs*, among aſtrologers, thoſe riſing from the nadir towards the zenith.

ASCENDING *Veſſels*, in anatomy, thoſe which carry the blood upwards, as the aorta aſcendens, and vena-cava aſcendens.

ASCENSION, in a general ſenſe, a moving upwards.

ASCENSION, in aſtronomy, is either right or oblique.

Right ASCENSION of the ſun, or of a ſtar, is the arch of the equinoctial, intercepted between the vernal equinoctial point, and the meridian that the ſun or ſtar appears in.

The reaſon of thus referring it to the meridian, is, becauſe that is always at right angles to the equinoctial; whereas the horizon is only ſo in a right or direct ſphere.

The right aſcenſion ſtands oppoſed to the right deſcenſion. Two fixed ſtars, which have the ſame right aſcenſion, i. e.

are in the ſame meridian, riſe at the ſame time in a right ſphere. If they be not in the ſame meridian, the difference between the time when they riſe is the preciſe difference of their right aſcenſion. In an oblique ſphere, where the horizon cuts all the meridians obliquely, different points of the meridian never riſe or ſet together; ſo that two ſtars on the ſame meridian never riſe or ſet at the ſame time, and the more oblique this ſphere is, the greater is the interval of time between them. To find the right aſcenſion of the ſun, ſtars, &c. trigonometrically, ſay, As radius is to the coſine of the ſun's greateſt declination, ſo is the tangent of the ſun's longitude from Aries, or Libra, to the tangent of right aſcenſion. See GLOBE.

Oblique ASCENSION, an arch of the equinoctial intercepted between the vernal equinoctial point, and that point of the equinoctial which riſes with the ſun or ſtar. In order to find the oblique aſcenſion, we muſt firſt find the aſcenſional difference.

ASCENSIONAL *Difference*, the difference between the right and oblique aſcenſion of the ſame point on the ſurface of the ſphere, or an arch of the equator intercepted between the points of right and oblique aſcenſion.

To find the aſcenſional difference of the ſun, ſtars, &c. trigonometrically, ſay, As the tangent of the complement of the latitude is to radius, ſo is the tangent of the declination to the ſine of the aſcenſional difference, which being found muſt be added to the right aſcenſion, if the declination and latitude be of different denominations; that is, one north and the other ſouth: but if of the ſame denomination, that is, both north or both ſouth, ſubtracted from the right aſcenſion, ſo will the ſum or remainder be the oblique aſcenſion required.

The aſcenſional difference is always equal to the exceſs or defect of the ſemi-ſolar day, above or under ſix hours; and, conſequently, if (according as the caſe requires) it be reduced into time, by allowing 15°. for one hour, &c. and added to, or ſubtracted from, ſix hours, we ſhall have the length of the day and night, and thence the true time of the ſun's riſing and ſetting. And becauſe, when the ſun is in the equinoctial, or that point where the ecliptic, equinoctial, horizon, and prime vertical, interſect each other, as , he riſes and ſets exactly at ſix o'clock; hence, if the ſun riſes before he arrives at the prime vertical, or ſix o'clock hour circle, he will riſe before ſix of the clock; and, conſequently, we muſt add the aſcenſional difference to ſix hours, to obtain the length of the ſemi-ſolar day; or to twelve hours, to obtain the length of the ſolar day, which will always happen in north latitude, when the ſun hath north declination, and in ſouth latitude, when he has ſouth declination: but if he does not riſe till he has paſſed the prime vertical, we muſt ſubtract the aſcenſional difference from ſix hours, to find the length of the ſemi-ſolar day, which will always happen in north latitude, when he has ſouth declination, and in ſouth latitude, when he has north declination.

To find the oblique aſcenſion, and aſcenſional difference, mechanically, by the globe. See GLOBE.

ASCENT, in a general ſenſe, implies the motion of a body upwards.

ASCENT *of Fluids*. See FLUID and ATTRACTION.

ASCENT *of Vapours*. Why vapours are raiſed by heat is no inconſiderable queſtion. And, among other things, we do not improperly ſuppoſe in theſe vapours inſenſible bubbles, conſiſting of a pellicle of water and included air. Such a bubble, therefore, being given, but which may contain air rarer than the circumambient, it is poſſible that the rarity of the included air may have greater force than the weight of the including pellicle of water: and therefore, that the entire bubble may be lighter than circumambient air of equal bulk, whereby the bubble, by the laws of hydroſtatics, will aſcend in the ſame manner as a cloſe veſſel of iron full of air would in water, if in proportion to its weight it have a ſufficient capacity; nor is the elaſtic force of the ambient air of greater force in this caſe than the gravity of a column of air; becauſe the elaſtic force in each part ariſes from the gravity of the column. But here will ariſe a great difficulty, namely, that the circumambient air leſs rare than the included air ſeems, by its elaſtic force, as if it would compreſs the bubble; and thus the included air will become of a denſity equal to that of the circumambient air. We are here, therefore, to obſerve, that there is a two-fold force in air, whereby it dilates itſelf, or preſerves its dilatation; the one innate, the other adventitious. The former is the elaſtic force, which exerts itſelf, not only when it is compreſſed into a leſs compaſs than uſual, as in wind-guns, but likewiſe in common air, which, as is evident from the experiments of the air-pump, when preſſed by the incumbent air, does, upon removing that preſſure, expand itſelf, if no other air be equally compreſſed, or any other impediment hinder; for flaccid bladders are ſpontaneouſly inflated under the receiver, nay even in the free air, if they are carried from a valley to an high hill; becauſe there they are leſs compreſſed.

The adventitious expanſive force of the air, which ſupplies the place of its elaſticity, is either heat or ſomething elſe analogous to heat in fermentation, or the like natural operation. Thus, it is poſſible that the air included in the bubble, and rarer than the circumambient air, may yet maintain itſelf, and ſuffer a compreſſion from it, which is manifeſt by the experiment of thermometers; and the greater the heat is, or any other force that internally dilates the air, the more will the aqueous pellicle be extended, and become the thinner. But here a new queſtion ariſes, namely, how ſuch bubbles can be formed, ſeeing the heat both of the included and circumambient air ſeems to be the ſame; in anſwer to this, it is to be obſerved, that the included air ſhall acquire a greater degree of heat than that which even the particles of the external air have; becauſe the circumambient air has both a greater and a different motion from the bubble: whence new hot particles thereof continually flowing to the ſame bubble like a hot wind, communicate a new degree of heat to the pellicle, and through it to the included air by the continued contact of new air, as we feel that the hand grows either warmer or colder, if moved in hot or cold water, than if it was at reſt therein: and it is the ſame thing, if the water be moved about the hand, becauſe many aqueous particles ſucceſſively touch the ſame part of the hand, and communicate their quality thereto. From this principle it appears, that wine in a glaſs bottle, ſwiftly moved up and down in cold water, or the water moved about the bottle, is the ſooner cooled.

Now, if we underſtand the cauſe why the bubbles of vapours aſcend, it will be no difficult matter to explain why they fall down again: for upon the heat gradually vaniſhing, the bubble will be compreſſed by the circumambient air; ſo that the included air, upon the ceaſing of the adventitious dilatation, ſhall return to a like denſity therewith; upon which the aqueous pellicle can neither aſcend in the air, nor ſupport itſelf therein, no more than an iron veſſel can float, or aſcend in water, if it is filled therewith. However, it is poſſible, and it uſually is ſo, that the vapours that are even ready to fall down, remain a little ſuſpended in the air, in the ſame manner in which duſt is ſuſtained therein; becauſe air, as all other fluids, has a certain degree of tenacity or coheſion of its parts, ſo as to require ſome degree of force, however ſmall, to break through it; and becauſe very ſmall bodies have a ſmall weight in proportion to their ſurface; yet, notwithſtanding their weight, they often remain ſuſpended, and they are only toſſed up and down by the motion of the ſuſtaining air. The ſame thing, therefore, happens to bubbles and very ſmall drops; but if a great number of drops concur, which is done by that very toſſing and motion, they coaleſce into a larger one, and becauſe the ſurfaces increaſe only as the ſquares, but the weights as the cubes of their diameters. Hence it is, that a bubble, or drop, by growing larger, acquires a ſufficient force to fall down; and even the ſuperior bubbles, falling on the inferior ones, coaleſce with them, and become bigger.

From theſe principles we ſhall now proceed to ſhew, by a calculus, how great the tenacity of aqueous particles in vapours muſt neceſſarily be, in proportion to the rarity of the included air, that ſuch vapours may aſcend.

Let 1 to *d* be the ratio of the denſity of the air included in a bubble to the ſpecific gravity of water, and *p* the weight of common air of the ſame bulk with a bubble of the vapour; let the center of the bubble be A, and A B the radius of the ſphere of included air, but A C the radius of the ſphere of the whole bubble, the ſpace of included air will be as the cube of A B, the ſpace of the whole bubble as the cube of A C, and the ſpace which the pellicle occupies as the difference of theſe cubes. Let us ſuppoſe that ſpace of the pellicle to be to the ſpace of the whole bubble, as 1 to *r*, the ſpace of the pellicle will be as the cube of $\frac{A\,C}{r}$, which is equal to the cube of A C — the cube of A B: therefore, the cube of A B is equal to the cube of A C — the cube of $\frac{A\,C}{r}$, equal the cube of A C $\times$ $1 - \frac{1}{r}$ equal the cube of A C $\times \frac{r-1}{r}$: and therefore, the cube of A B is to the cube of A C, as $r-1$ to *r*. But the weight of the included air is to that of common air of equal bulk with the bubble, or to *p* in the compound ratio of the volumes, (or of the cube of A B to the cube of A C, or $r-1$ to *r*) and of the ſpecific gravities; (1 to *d*) that is, in the ratio of $r-1$ to *r d*. The weight, therefore, of the included air will be $p \times \frac{r-1}{rd}$: the weight of the including pellicle of water will be in like manner to the weight of common air of equal bulk with the bubble in the compound ratio of the volumes, (1 to r by the hypotheſis) and of the ſpecific gravities 800 to 1; (water being 800 times the ſpecific gravity of air, by experiments) the weight of the pellicle, therefore will be $\frac{800p}{r}$; but, adding the weight of the pellicle to the weight of the included air, we ſhall have the weight of the whole bubble, which will be $\frac{p \times \overline{r-1+800d}}{rd}$, and that ſhould be leſs than p, the weight of common air of equal bulk with the bubble, that the bubble may aſcend therein; and $r-1+800d$, will be leſs than rd: and, therefore, rdr will be greater than $800d-1$; and, therefore, r will be greater than $\frac{800d-1}{d-1}$, or the ratio of the ſpace of the bubble to that of the pellicle, will be greater than $800d-1$ to $d-1$. Whence if d be 10, or if common air be 10 times denſer than the included air, the ratio of the ſpace of the bubble to that which the pellicle occupies, will be greater than the ratio of 7999 to 9, or greater than 888,777, &c. to unity; where 888 are unities, but 777, &c. is a decimal fraction; to wit, ,7,07,007, &c. as you would incline to be more exact: and, therefore, the ſpace of the whole bubble will, in this caſe, exceed that of the aqueous pellicle upwards of 888 times. The ratio of the thickneſs of the pellicle to the radius of the ſpherical bubble; that is, the ratio of A C — A B to A C may, from hence be eaſily determined; for A B is to A C as $\overline{\frac{r-1}{r}}^{\frac{1}{3}}$ to $r^{\frac{1}{3}}$. The thickneſs, therefore, of the pellicle is to the radius of the bubble as $1-\overline{\frac{r-1}{r}}^{\frac{1}{3}}$ to unity: beſides $r-1$ is to r as $\frac{r-1}{r}$ to unity; and ſince r is greater than $\frac{800d-1}{d-1}$, $\frac{1}{r}$ will be leſs than $\frac{d-1}{800d-1}$, and $\frac{r-1}{r}$ will be greater than $1-\frac{d-1}{800d-1}$, or than $\frac{800d-1-d+1}{800d-1}$, or than $\frac{799d}{800d-1}$: therefore $\overline{\frac{r-1}{r}}^{\frac{1}{3}}$ is greater than $\overline{\frac{799d}{800d-1}}^{\frac{1}{3}}$; therefore at length $1-\overline{\frac{r-1}{r}}^{\frac{1}{3}}$, or the thickneſs of the pellicle, if unity expreſs the radius of the bubble, is leſs than $1-\overline{\frac{799d}{800d-1}}^{\frac{1}{3}}$, that the bubble may aſcend in air.

By the rules which Archimedes has given, it appears that if a veſſel contain a weight of water greater than its own weight, it will float therein; but if ſtill greater veſſels be taken, the weights of the veſſels increaſe nearly as the ſurfaces; but their capacities as the ſolidities, that is, the weights of the veſſels are as the ſquares of the diameters, the capacities (and conſequently the weight of water they contain) as the cubes; and thus, by augmenting the capacity of the veſſel, the weight of the veſſel is immediately overcome by the weight of what it can contain, and the veſſel may float.

ASCETICS, in eccleſiaſtical hiſtory, ſuch Chriſtians in the primitive church as inured themſelves to great degrees of abſtinence and faſting, in order to ſubdue their paſſions. In ſhort, every degree of uncommon piety laid claim to the title of aſcetic.

ASCII, in geography, the inhabitants of the torrid zone; becauſe, at certain times of the year, they have no ſhadow.

ASCITES, in medicine, the ſame with dropſy. See DROPSY.

ASH, fraxinus, in botany, a genus of trees: it hath pinnated leaves, which moſtly end in an odd lobe: the male flowers, which grow at a remote diſtance from the fruit, have no petals, but conſiſt in many ſtamina; the ovary becomes a ſeed-veſſel, containing one ſeed at the bottom, ſhaped like a bird's tongue.

There are ſix ſpecies of this tree; all which may be propagated by budding them into common aſh; upon which they will all take very well, and become hardier than upon their own ſtock: but theſe budded trees never grow ſo large as thoſe which are raiſed from ſeeds: nor will the ſtock and bud keep pace in their growth; ſo that there will be a remarkable difference in the ſize of the ſtem, and above the place where they are budded: but few of theſe foreign kinds have yet arrived at an age to produce ſeeds in England, the nurſery-gardeners having been obliged to propagate theſe ſorts by budding and grafting.

The common aſh is propagated by ſowing the keys in October or November, on a bed of freſh earth, which ſhould be well dug, and cleanſed from roots and noxious weeds. A ſmall bed will be ſufficient to raiſe a great quantity of theſe trees. The ſeeds ſhould be ſown pretty thick, and covered about half an inch thick with earth.

Theſe ſeeds, many times, continue until the ſecond ſpring before they come up; you ſhould, therefore, let the bed remain undiſturbed, and keep it clean from weeds. When your plants come up, you muſt alſo keep them very clear from weeds, and if the ſeaſon ſhould prove very dry, if you give them now and then a little water, it will greatly promote their growth. In this bed they ſhould remain no longer than the autumn following, provided they have grown well; at which time you ſhould prepare a nurſery, which ſhould be well dug and cleared as before; then with your ſpade looſen the roots of the plants before you draw them up; otherwiſe you will endanger the breaking of them. When you have drawn them out of the ground, ſhorten the downright tap root; but do not cut off any of the lateral fibres; then, having prepared your ground, plant them in rows, three feet diſtance, row from row, and a foot aſunder in the rows, cloſing the earth to the roots with your feet.

In this nurſery they may remain two or three years, obſerving to keep them clear from weeds, as alſo to trim up the ſide branches every winter, and dig the ground between the rows; after which time you may remove them where they are to remain for good. This tree will grow upon almoſt any ſoil; but the better the ſoil is, the more the tree will increaſe in bulk. Notwithſtanding which, it ſhould not, by any means, be planted too near the other trees or plants; for it will exhauſt all the goodneſs of the ſoil from them; and the ſhade of this tree is malignant to moſt other plants. The diſtance they ſhould be planted is eight feet ſquare; and, after they have been planted one year, you may cut down every other tree, chooſing ſuch of them as are crooked, within ſix or eight inches of the ground; this will cauſe them to make many ſtrong, vigorous ſhoots; which, in ſeven or eight years time, will be fit for arbour poles, or to make hoops; and the other ſtraight trees may be ſuffered to grow for other timber; the number of which trees may be leſſened, as they increaſe in bulk, leaving ſtill the moſt promiſing ones to grow for larger timber.

If a wood of theſe trees is rightly managed, it will turn greatly to the advantage of its owner; for by the underwood, which will be fit to cut every ſeven or eight years, for the uſes abovementioned, there will be a continual income, more than ſufficient to pay the rent of the ground, and all other charges; and ſtill there will be a ſtock preſerved for timber, which, in a few years, will be worth forty or fifty ſhillings per tree.

This timber is of excellent uſe to the wheel-wrights, and cart-wrights, for ploughs, axle-trees, wheel-rings, harrows, bulls, oars, blocks for pullies, and many other purpoſes.

The beſt ſeaſon for felling of theſe trees is from November to February; for if it be done either too early in autumn, or too late in the ſpring, the timber will be ſubject to be infeſted with worms, and other inſects: but, for lopping of pollards, the ſpring is preferable for all ſoft woods.

ASHES, *Cineres*, the earthy particles of combuſtible ſubſtances after they have been burnt.

Aſhes that are produced from vegetable bodies, contain a conſiderable quantity of fixt ſalt, blended with the terrene particles; and from theſe aſhes the fixed alkaline ſalts, called pot-aſh, pearl-aſh, &c. are extracted.

The aſhes of all vegetables are vitrifiable, and found to contain iron. They are alſo an excellent manure for cold and wet grounds.

* ASIA, is one of the four general parts of the whole earth. It is ſeparated from Europe by the Mediterranean Sea, the Archipelago, the Black Sea, the Palus Meotis, the Don, and the Dwina; and from Africa by the Arabic Gulph or Red Sea, and the Iſthmus of Suez. Every other part is ſurrounded by the ocean. Late diſcoveries ſhew that it does not join to America, though it extends very near it. It is ſituated between forty-four and an hundred and ninety-ſix degrees of longitude, and one and ſeventy-four degrees of latitude. From the Dardanelles to the moſt eaſtern ſhore of Tartary, it is four thouſand ſeven hundred and forty miles in length, and from the moſt ſouthern point of Malacca to the moſt northern point of Nova Zembla, is four thouſand three hundred and eighty miles in breadth. It may be divided into ten parts; Turky in Aſia, Arabia, Perſia, the Mogul's Empire, with the two Peninſulas of the Indies; Tibet, China, and Korea; Great and Little Bukaria, with Koraſin; Tartary, Siberia, and the iſlands. Turky, Perſia, the Mogul's Empire, and China, are ſubject to ſingle monarchs; the reſt are divided

among ſeveral ſovereigns. Siberia is ſubject to the Ruſſians, Little Tartary to the Tartars of the Crim; Great Tartary, partly to the Ruſſians, partly to its own monarch, and partly to China. Great Bukaria is ſubject to the Perſians; and Little Bukaria, partly to the Tartars, and partly to the emperor of China. There are ſeven emperors, thirty kings, beſides petty princes, and the rajahs of India. The emperors are, the grand ſignior, the great mogul, the emperor of Japan, the khan of the Eluth Tartars, the emperor of Ruſſia, the emperor of China, and the ſhah of Perſia. The principal religions of Aſia, are, the Chriſtian, the Mahomedan, the Pagan, and that of Confucius. The Chriſtian religion is profeſſed in ſome parts of Aſiatic Turky; part of Little Tartary, the north-weſt part of Perſia, and by the Ruſſians in Siberia. The Mahomedan is eſtabliſhed in Arabia, Perſia, Little Tartary, Bukaria, and the Mogul's empire. The Pagan religion, wherein the worſhip of the Deity is mixt with that of idols, is profeſſed by the bulk of the inhabitants of the Mogul's empire; in both the Peninſulas of India; in China and Siberia; in the iſlands of Aſia; in all Weſtern Tartary, in Tibet, and in all the countries between India and China. The religion of Confucius is eſtabliſhed in China.

The languages of Aſia are very numerous, and therefore we ſhall only mention the chief. The principal of Turky in Europe, are the Grecian and Turkiſh; the Armenian is ſpoken in part of Turky in Aſia, and Perſia; the Arabic is the only tongue in Arabia, and is ſpread over part of Turky in Aſia, as a learned language. The Perſian is uſed in Perſia, and the court of the great mogul. The Indian is ſpoken in India, by the ancient inhabitants of that country. The Malayan language is common on the coaſt of India, and in ſome of the iſlands. The Siameſe in Siam, the Tibetran in Tibet; the Manchew in China and Eaſtern Tartary; and the Tartarian in Great Tartary. Beſides theſe, there are ſeveral diſtinct languages in Siberia, and the iſlands of Aſia.

The principal rivers of Aſia are, the Euphrates and Tigris, in Turky; the Indus and Ganges, in India; the Kiang and Hoang-ho, in China; the Sir Amu and Wolga, in Weſtern Tartary; the Saghalia Ula or Amur, in Eaſtern Tartary; the Irtiſh, Oby, Jeniſea, and Lena, in Siberia. The lakes are, that prodigious one called the Caſpian Sea, and near that another very large one, called the lake Aval. The Baykal is in Siberia, the Kokonor near Tibet, and the Tong Ping in China. The chief mountains are, the Taurus in Turky and Perſia; the Imaus between India and Tibet, and the Altay, in Tartary.

The Aſian iſlands are very numerous, ſome reckoning one hundred and fifty thouſand; but of this there is no certainty. Thoſe that lie on the eaſt of Aſia are, the iſlands of Jeſſo or Yedſo, and Japan, with ſeveral ſmall ones on the coaſt of Korea, the iſland of Formoſa, and the Philippines. Thoſe on the weſt, are the iſland of Cyprus, in the Mediterranean; Scanderoon, off Natolia, and the iſle of Rhodes, off Phiſchio, on the ſame coaſt. Thoſe on the ſouth are, the iſles of the Maldives, in the Indian Sea, the iſle of Ceylon, off cape Komorin, with a great many ſmall ones in the gulph of Bengal. Thoſe on the ſouth-eaſt are, the iſles of Sandi, as Sumatra, the iſles of Java, Borneo, &c.

ASIA MINOR. See NATOLIA.

ASP, in natural hiſtory, a ſpecies of ſerpents frequently mentioned by the ancients, but without any accurate deſcription of it. It is undoubtedly a native of Africa; and it was by the bite of one of theſe ſerpents that Cleopatra is ſaid to have ended her days. Seba gives the name of aſp to ſeveral ſerpents, the firſt of which is ſaid to be found in Egypt, and is ſpotted with black.

The ſecond is the American aſp, which nearly reſembles this in every reſpect.

The third is the Java aſp of a ſea-green, with a ſharp mouth, and a long head covered with ſcales on the fore parts.

The fourth is the Surinam aſp of a bright green colour, ſprinkled with blackiſh ſpots.

ASPARAGUS, in botany, the name of a genus of plants, whoſe flower is of the roſaceous kind. The garden aſparagus is propagated by ſowing of the ſeeds; in the procuring of which you ſhould be particularly careful, ſince the goodneſs of your future crop, in a great meaſure, depends thereon: you ſhould, therefore, get it from ſome perſon of integrity; or, if you have any opportunity, ſave it yourſelf, or in ſome other neighbouring garden. You muſt look over the aſparagus-beds in the beginning of the ſeaſon, and mark ſome of the largeſt and faireſt buds with a piece of ſtick; which buds, when they have branched out, may be faſtened to ſtakes thruſt into the ground, to preſerve them from breaking. Theſe buds will, many of them, produce great numbers of red berries, which ſhould be ſuffered to remain upon the branches until the latter end of September, when the haulm will begin to decay; then cut off the branches, and ſtrip the berries into a tub, where they may lie in an heap to ſweat for three weeks, by which means the outer huſks will be rotten; then fill the tub with water, and with your hands break all the huſks, by ſqueezing them between your hands. Theſe huſks will all ſwim upon the water, but the ſeed will ſink to the bottom; ſo that, by pouring off the water gently, the huſks will be carried along with it; and by putting freſh water two or three times, and ſtirring your ſeed, you will make it entirely clean; then ſpread your ſeed upon a matt, and expoſe it to the ſun and air in dry weather, until it is perfectly dry, when you may put it into a bag, and hang it up in a dry place, till the beginning of February; at which time you muſt prepare a bed of good, rich earth, whereon you muſt ſow your ſeed; (but not too thick, which will cauſe your plants to be ſmall) and, having trod your ſeed into the ground, rake it over ſmooth.

In the following ſummer keep it diligently cleared from weeds, and toward the latter end of October, when the haulm is quite withered, you may ſpread a little rotten dung over the ſurface of the ground, about an inch thick, which will preſerve the young buds from being hurt by the froſts, &c.

In the ſpring following your plants will be fit to plant out for good; (for I would never chuſe plants of more than one year's growth, having very often experienced them to take much better than older, and to produce finer roots) you muſt therefore prepare your ground by trenching it well, burying therein a good quantity of rotten dung at the bottom of each trench, that it may lie at leaſt ſix inches below the ſurface of the ground: then level your whole plot very exactly, taking out all large ſtones; but this ſhould be done not long before you intend to plant your aſparagus, in which you muſt be governed according to the nature of your ſoil, or the ſeaſon; for if your ſoil is dry, and the ſeaſon forward, you may plant early in March; but, in a very wet ſoil, it is better to wait till the end of that month, or the beginning of April, which is about the ſeaſon that the plants are beginning to ſhoot.

The ſeaſon being now come, you muſt, with a narrow-pronged dung-fork, carefully fork up your roots, ſhaking them out of the earth, and ſeparating them from each other; obſerving to lay their heads even, for the more convenient planting them; which muſt be performed in this manner: Your plot of ground being levelled, you muſt begin at one ſide thereof, ranging a line very tight acroſs the piece, by which you muſt throw out a trench exactly ſtraight, and about ſix inches deep, into which you muſt lay your roots, ſpreading them with your fingers, and placing them upright againſt the back of the trench, that the buds may ſtand forward, and be about two inches below the ſurface of the ground, and at twelve inches diſtance from each other; then, with a rake, draw the earth into the trench again, laying it very level, which will preſerve the roots in their right poſition: then remove your line a foot farther back, and make another trench in like manner, laying therein your plants, as before directed, and continuing the ſame diſtance row from row; only obſerving, between every four rows, to leave the diſtance of two feet four inches, for an alley to go between the beds, to cut the aſparagus, &c.

Your plot of ground being finiſhed and levelled, you may ſow thereon a ſmall crop of onions, which will not hurt your aſparagus; and tread in your ſeeds, raking your ground level. There are ſome perſons who plant the ſeeds of aſparagus in the place where the roots are to remain; which is a very good method, if it be performed with care. The way is this: after the ground has been well trenched and dunged, they lay it level, and draw a line acroſs the ground, in the ſame manner as is practiſed for planting of the young plants; then, with a dibble, make holes at a foot diſtance, into each of which you muſt drop two ſeeds, for fear one ſhould miſcarry; theſe holes ſhould not be more than half an inch deep: then cover the ſeeds, by ſtriking the earth in upon it; and go on, removing the line a foot back for another row; and, after four rows are finiſhed, leave a ſpace for an alley between the beds, if it is deſigned to ſtand for the natural ſeaſon of cutting; but if it is to be taken up for hot-beds, there may be ſix rows planted in each bed; and the diſtance in the rows need not be more than nine inches. This ſhould be performed by the middle of February, becauſe the ſeeds lie long in the ground: but if onions are intended to be ſown upon the ground, that may be performed a fortnight or three weeks after, provided the ground is not ſtirred ſo deep as to diſturb the aſparagus-ſeeds, in raking the onion ſeed into the ground.

When your aſparagus is come up, (which will be in three weks or a month after planting) you muſt, with a ſmall hoe, cut up the weeds, and thin your crop of onions, where they may have come up in bunches; but this muſt be done carefully, and in dry weather, that the weeds may die as faſt as they are cut up. This work muſt be repeated about three times; which, if well done, and the ſeaſon not too wet, will keep the ground clear from weeds, until the onions are fit to be pulled up; which is commonly in Auguſt, and is known when their greens fall down. When you have drawn off your onions, you muſt clean your ground well from weeds; which will keep it clean till you earth your beds, which muſt be done in October, when the haulm begins to decay; for if you cut off the haulm, while green, the roots will ſhoot freſh again, which will greatly weaken them. This young haulm ſhould be cut off with a knife, leaving the ſtems two or three inches above ground, which will be a guide to you to diſtinguiſh the beds from the alleys; then, with an hoe, clear off the weeds into the alleys, and dig up the alleys, burying the weeds in the bottom; and throw the earth upon the beds, ſo that the beds may be about five inches above the level of the alleys: then you may plant a row of coleworts in the middle of the alleys; but do not ſow or plant any thing upon the beds, which would greatly weaken the roots: nor would I ever adviſe the planting of beans in the alley (as is the practice of many), for it greatly damages the two outſide rows of the aſparagus. In this manner it muſt remain till ſpring, when you muſt hoe over the beds, to deſtroy all young weeds; then rake them ſmooth, and obſerve, all the ſucceeding ſummer, to keep them clear from weeds; and, in October, dig up the alleys again, as was before directed, earthing the beds, &c. The ſecond ſpring after planting, you may begin to cut ſome of your aſparagus, though it will be much better to ſtay until the third; therefore now you muſt fork up your beds with a flat-pronged fork, made on purpoſe, which is commonly called an aſparagus fork: this muſt be done before the buds ſhoot in the ſpring, and with care, leſt you fork too deep, and bruiſe the head of the root; then rake the beds over ſmooth, juſt before the buds appear above-ground; which will deſtroy all young weeds, and keep your beds clean much longer than if left unraked, or done ſo ſoon as forked: and when your buds appear about four or five inches above-ground, you may then cut them; but it ſhould be done ſparingly, only taking the large buds, and ſuffering the ſmall to run up to ſtrengthen the roots; for the more you cut, the more the roots will produce; but they will be ſmaller, and ſooner decay. When you cut a bud, you muſt open the ground with your knife, (which ſhould be very narrow and long in the blade, and filled with teeth like a ſaw) to ſee whether any more young buds are coming up cloſe by it, which might be either broken or bruiſed in cutting the other; then, with your knife, ſaw it off about three inches under-ground. This may appear a troubleſome affair to people unacquainted with the practical part; but thoſe who are employed in cut ing aſparagus, will perform a great deal of this work in a ſhort time; but care in doing it is abſolutely neceſſary to be obſerved by all who cut aſparagus.

The manner of dreſſing your aſparagus-beds, is every year the ſame as directed for the ſecond; only obſerve, every other year, to lay a little rotten dung, from a melon or cucumber-bed, all over your beds, burying ſome in the alleys alſo at the time for digging them up. This will preſerve your ground in heart, to maintain your roots in vigour; and, by this management, a plot of good aſparagus may be continued for ten or twelve years in cutting, and will produce good buds. *Miller's Gard. Dict.*

ASPECT, among gardeners, the ſame with expoſure. See EXPOSURE.

The word is derived from *aſpicio*, to view.

ASPECT, in aſtronomy, denotes the ſituation of the planets and ſtars, with reſpect to each other. There are five different aſpects. 1. Sextile aſpect is when the planets or ſtars are 60° diſtant, and marked thus ✱. 2. The quartile, or quadrate, when they are 90° diſtant, marked □. 3. Trine, when 120° diſtant, marked △. 4. Oppoſition, when 180° diſtant, marked 8. And, 5. Conjunction, when both in the ſame degree, marked 6.

Double ASPECT, in painting, is uſed where a ſingle figure is ſo contrived as to repreſent two or more different objects, either by changing the poſition of the eye, or by means of angular glaſſes.

ASPEN-TREE, in botany, the poplar with trembling leaves. See POPLAR.

ASPERA *Arteria,* trachea, or wind-pipe, in anatomy, a large canal, partly cartilaginous, and partly membranous, ſituated anteriorly in the lower part of the neck, whence it runs down into the thorax, between the two pleuræ, through the upper ſpace left between the duplicature of the mediaſtinum, behind the thymus.

ASPERIFOLIATE, or ASPERIFOLIOUS, among botaniſts, plants that are rough leaved, having their leaves placed alternately on their ſtalks, and a monopetalous flower divided into five parts. The bugloſs, borage, &c. are of this claſs.

ASPERITY, the inequality of the ſurface of any body, which hinders the hand from paſſing over it freely.

ASPERULA, woodruffe, in botany, a genus of plants. The leaves and roots of which are eſteemed aperient and diuretic, and conſequently preſcribed in the jaundice, and obſtructions of the viſcera.

ASPHALTUM, *Bitumen Judaicum,* or Jews pitch, in natural hiſtory, a ſolid, light, bituminous ſubſtance, found floating on the ſurface of the Dead-ſea, and dug out of the earth in ſeveral parts of Egypt.

Abundance of virtues are attributed to this bitumen; but it has for many years been diſregarded in this country.

ASPHODELUS, aſphodel, in botany, a genus of plants.

All the ſorts of which are very pretty ornaments for a flower-garden; and, requiring very little trouble to cultivate them, are rendered more acceptable. They may be all propagated by ſeeds; which ſhould be ſown ſoon after they are ripe, on a warm border of freſh light earth. In the ſpring the plants will appear, when you ſhould carefully clear them from weeds; and, in dry weather, they muſt be frequently watered: if this be duly obſerved, the plants will have acquired ſtrength enough to be tranſplanted by the Michaelmas following into the flower nurſery, where you may let them remain a Year, and then tranſplant them into the flower garden, when their leaves are decayed; obſerving to place them in the middle of the borders, among other hardy kind of flowers, where, being properly intermixed, they will make an agreeable variety, and continue a long time in flower. Theſe plants may alſo be propagated by parting their roots; but this muſt not be too often repeated, leſt it weaken the roots, and prevent their flowering ſo ſtrong as they otherwiſe would do.

ASPHURELATA, in natural hiſtory, ſemi-metallic foſſils, which are fuſible by fire, but not malleable in their perfect ſtate. There are five bodies belonging to this claſs of foſſils, namely, antimony, biſmuth, cobalt, zinc, and mercury, or quickſilver. See each under its proper article.

ASPIRATION, in grammar, the pronouncing a ſyllable with ſome vehemence; as we do in thoſe words which have the the letter *h* before them; as *hear, herd, heath, heat, health, &c.*

ASPLENIUM, ſpleenwort or miltwaſte, in botany, a ſmall buſhy plant, growing in fiſſures of rocks and old walls: The leaves ſtand recommended as a pectoral, ſimilar to maiden-hair, to which they have been frequently joined in infuſions and apozems; and likewiſe as an aperient in obſtructions of the viſcera.

ASS, in natural hiſtory, an animal well known, which would be of great value, if horſes were not ſo common; and if he was taken as much care of, he would, in all probability, turn out to a much greater advantage than he does at preſent. But we muſt not forget that an aſs is not without ſome good qualities; for he ſeems to know his maſter, and can diſtinguiſh him from all other men, though he has been ever ſo ill-treated. He alſo knows the roads he has been accuſtomed to, and can find them without a guide. He has good eyes, a fine ſmell, and an excellent ear. He walks, trots, and gallops like a horſe; but his pace in all other reſpects is much ſlower, and he is ſooner tired. Of all animals that are covered with hair, the aſs is leaſt ſubject to vermin: which may perhaps proceed from the hardneſs and dryneſs of his ſkin; for which reaſon he is leſs ſenſible of the ſtrokes of a whip, and the ſtinging of flies, than a horſe. The teeth fall out, and grow at the ſame age, and in the ſame manner, as in a horſe, and he has the ſame marks in his mouth. Aſſes generally breed in May and June, and in the tenth month the milk appears in the dugs of the female; but ſhe does not foal till the twelfth month. She always brings forth one at a time: at leaſt there are few inſtances to the contrary. The aſs, like the horſe, is three or four years in growing, and will live till twenty-five or thirty years. They ſleep much leſs than a horſe, and never lie down for that purpoſe, unleſs they are very much tired. In general, they have much better health than a horſe, and are ſubject to fewer diſeaſes.

The onager, or wild-aſs, has been, by ſome authors, confounded with the zebra, but very improperly, the latter being a diſtinct ſpecies; for the onager is not ſtreaked like the zebra, nor is his ſhape ſo beautiful. Some have alſo been of opinion,

nion, that the wild aſs is not a diſtinct animal from the common aſs; but all judicious travellers that have taken notice of them, affirm the contrary. They have indeed much the ſame ſhape as common aſſes, but are of a brighter colour, and a white liſt runs from the head to the tail. Of the hide of theſe aſſes, and particularly of that part next the rump, they make that excellent leather which we call ſhagreen, and which is put to ſo many curious uſes.

ASSES *Milk*, the milk of an aſs. In the firſt place aſſes milk is thinner than all other milks, and abounds with watery and ſerous ingredients, and conſequently muſt be extremely proper to open the obſtructed veſſels, to attenuate the groſs and viſcid juices, and ſet them in an eaſy and free motion. Again, when we know that multitudes of diſtempers proceed from an acrid, ſalt, and corroſive ſtate of the fluids, we cannot but be aſſured that the thin ſerum of aſſes milk will not fail of diluting, ſoftening, and ſubduing them: though it muſt be allowed, at the ſame time, that the ſweet oily ſubſtance contained in it contributes much towards this effect.

It is another extraordinary excellence of aſſes milk, that it contains but a ſmall proportion of the groſſer curdling ſubſtance. For this reaſon it eaſily diffuſes itſelf into the minuteſt extremities of the blood-veſſels, thoroughly dilutes the vital juices, liquifies the ſluggiſh humours, and, when it has thus diſſolved them, conveys them off. A third circumſtance that more ſtrongly evinces the ſalubrious quality of aſſes milk, is, that the ſhare of cheeſe-like ſubſtance which it contains, is extremely ſoft and tender, and never makes a groſs or firm curd. In all cures which are ſought by milk, nothing can be ſo hurtful and dangerous as to have it curdle in the ſtomach. It is beyond diſpute therefore, that that milk is the moſt wholeſome and proper for medicinal uſes, which has leaſt tendency to curdle, which is the caſe with aſſes milk in the moſt remarkable degree. A fourth, and a very great excellence in aſſes milk, is its exquiſite ſweetneſs, in which it exceeds all other ſpecies of milk, except the human: As aſſes milk therefore contains ſo plentiful a proportion of ſweet ſalts, we cannot doubt but it has for that reaſon a very ſingular medicinal quality which cannot be expected in other kinds of milk: for this honey-like ſalt greatly ſoftens, checks, and moderates the acrimony of humours, whether acid or bilious; and, by gently irritating the fibres of the bowels, urges them to their office and operations. Hippocrates very juſtly obſerves, that aſſes milk diſpoſes to purging more than any other; and in another place adviſes, as a remedy for the fluor albus, firſt to occaſion a gentle purging by drinking aſſes milk, and then to change it for cows milk. Hence we ſee the reaſon why ſo much benefit is often found by perſons of a conſumptive habit, from drinking aſſes milk.

ASSARON, or OMER, a meaſure of capacity, uſed among the Hebrews, containing five pints.

ASSASSIN, one who kills another ſecretly, or by attacking his enemy unprepared. Alſo a perſon who, for the ſake of ſome reward, undertakes to murder a perſon in order to revenge the quarrel of another.

ASSAULT, in law, a violent injury offered to a man's perſon, of a higher nature than battery; for it may be committed by offering a blow, or pronouncing a terrifying ſpeech. Thus, in caſe a perſon threatens to beat another, or lies in wait to do it, if the other is hindered in his buſineſs, and receives loſs, it will be an aſſault for which an action may be brought, and damages recovered. Not only ſtriking, but thruſting, puſhing, throwing ſtones, or even drink in the face of any perſon, are deemed aſſaults. But in all theſe caſes, a man may plead in his juſtification the defence of his perſon or goods, father, mother, wife, maſter, &c.

ASSAULT, in the military art, a furious effort made to carry a fortified poſt, camp, or fortreſs, wherein the aſſailants do not ſcreen themſelves behind any works.

ASSAY, in metallurgy, the trial of the goodneſs and purity of metals and metallic ſubſtances.

ASSAY *Oven*, or *Docimaſtical Furnace*, a furnace uſed in aſſaying metals.

ASSAYING, the art of diſcovering how much pure metal is contained in any ore; or the proportion of the ſeveral ingredients in any mixed metal. See the articles GOLD, SILVER, LEAD, COPPER, &c.

ASSAYING of weights and meaſures, the examining the ſeveral weights and meaſures by the clerk of the market.

ASSAY-MASTER, an officer appointed by certain corporations, to make juſt aſſays of all gold and ſilver brought to him for that purpoſe, and make a true report thereof.

ASSEMBLY, in military affairs, the ſecond beating of the drum before a march, on which the ſoldiers ſtrike their tents, roll them up, and ſtand to arms.

ASSENT, *Aſſenſus*, in a general ſenſe, an agreement to ſomething propoſed or affirmed by another.

Royal ASSENT, the approbation given by the king to a bill in parliament, after which it becomes a law.

ASSIGN, in common law, one to whom a thing is aſſigned or made over.

ASSIGNEE, in law, a perſon appointed by another to do an act, tranſact ſome buſineſs, or enjoy a particular thing.

Aſſignees may be appointed either by deed or by law: by deed, where the leſſee of a farm aſſigns the ſame to another; by law, where the law makes an aſſignee without any appointment of the perſon intitled; as an executor is aſſignee in law to the teſtator, and an adminiſtrator to an inteſtate. But when there is an aſſignee by deed, the aſſignee in law is not allowed.

ASSIGNING, in a general ſenſe, the making over the right of one perſon to another. In a particular ſenſe, the pointing out of ſomething, as an error, falſe judgment, or waſte: but in theſe caſes it muſt be ſhewn wherein the error is committed, where and how the judgment is unjuſt, and where the waſte is committed.

ASSIGNMENT, in law, the transferring the intereſt a perſon has in a leaſe, or other thing, to another.

ASSISE, implies a court, place, or time, when and where the writs and proceſſes, whether civil or criminal, are decided by judge and jury. In this ſenſe, aſſiſe is either general or ſpecial; general, when judges go their reſpective circuits, with commiſſion to take all aſſiſe: ſpecial, when a commiſſion is granted to particular perſons for taking an aſſiſe upon one or two diſſeiſins only.

By magna charta, juſtices ſhall be ſent through every county, once a year, who, with the knights of the ſeveral ſhires, ſhall take aſſiſe of novel diſſeiſin. With regard to the general aſſiſe, all the counties of England are divided into ſix circuits, and two judges are aſſigned by the king's commiſſion to every circuit, who now hold the aſſiſes twice a year, in every county except Middleſex, and the counties palatine. Theſe judges have five ſeveral commiſſions. 1. Of oyer and terminer, by which they are empowered to try treaſons, felonies, &c. 2. Of gaol-delivery, which empowers them to try every priſoner in gaol, be his offence what it will, 3. Of aſſiſe, which gives them authority to do right upon writs, brought by perſons wrongfully thruſt out of their lands and poſſeſſions. 4. Of niſi prius, by which civil cauſes come to an iſſue in the courts of Weſtminſter, are tried in the vacation by a jury of twelve men, in the county where the cauſe of action ariſes. 5. A commiſſion of the peace in every county of the circuit: and all juſtices of the peace and ſheriffs are to attend upon the judges, otherwiſe they are liable to be fined.

ASSISE is alſo uſed in ſeveral other ſignifications; as 1. For a jury, where aſſiſes of novel diſſeiſin are tried, and the pannels of aſſiſe ſhall be arraigned. 2. For a quantity of wheat, bread, &c. preſcribed by the ſtatute.

ASSOCIATION, the act of aſſociating, or conſtituting a ſociety, or partnerſhip, in order to carry ſome ſcheme or affair with more advantage.

ASSOCIATION *of Ideas*, is where ideas conſtantly and immediately follow one another, ſo that the one ſhall almoſt infallibly produce the other, whether there be any natural relation between them or not.

ASSUMPSIT, in law, a voluntary or verbal promiſe, whereby a perſon undertakes to perform ſome agreement, or pay a certain ſum to another. Thus, where a man ſells goods to another, the law makes the aſſumpſit; and promiſes he ſhall pay for them.

ASSUMPTION, a feſtival in the Romiſh church, celebrated in honour of the miraculous aſcenſion of the Virgin Mary, body and ſoul, into heaven.

ASSUMPTION, in logic, the minor or ſecond propoſition in a categorical ſyllogiſm.

ASSUMPTION is alſo ſometimes uſed to imply a conſequence drawn from the propoſitions which compoſe an argument.

ASSURANCE, or INSURANCE. See INSURANCE.

* ASTARTE, in heathen mythology, a Phœnician goddeſs, called the queen of heaven. It is ſaid the moon was adored under this name; others ſuppoſe her to be the gooddeſs Juno; Cicero calls her the fourth Venus of the Aſſyrians; and Lucian, Europa, the daughter of Agenor. She was ſometimes repreſented holding a long wand with a croſs upon the top of it, Some medals repreſent her crowned with battlements, and others with a crown of rays, Sanchoniathon repreſents her with a cow's head; and in a medal ſtruck at Cæſarea, in Paleſtine, ſhe is crowned with battlements, with a man's head in her right hand, and a ſtaff in her left, This goddeſs, was originally no more than

one of the Egyptian ſymbols, ſet up and joined with the ſeveral ſigns of the zodiac, to make known the different ſeaſons; and it is plain, that from the different manner in which the Egyptian Iſis was repreſented, a number of different goddeſſes were formed by other nations, and worſhipped under different names.

ASTERIA, in fabulous hiſtory was the daughter of Cea, Latona's ſiſter. Jupiter ſurpriſed her in the ſhape of an eagle, and carried her away in his talons.

ASTERISK, a mark or character in the form of a ſmall ſtar (*), placed over or before or after any word or ſentence, to render it more conſpicuous; or refer the reader to the margin, or elſewhere for a quotation, explanation, or the like.

ASTERN, in navigation, any diſtance behind a ſhip, or in direct oppoſition to that point of the compaſs which ſhe ſtems.

ASTHMA, in medicine, a painful, difficult, and laborious reſpiration, occaſioned by an intolerable ſtraightneſs of the præcordia, which, by impeding the free circulation of the blood through the lungs, endangers a ſuffocation.

There are ſeveral kinds of aſthmas: one difficulty of breathing proceeds from corpulency, and a very full habit of body, and is moſt apparent after violent motion; but this is a ſlight diſorder, and free from all danger. The next is the pituitous aſthma, attended with a moiſt cough, and the bringing up pituitous matter; it attacks the patient at all hours, and in all poſitions of the body; and is owing to a plenty of a viſcid mucus, ſtuffing the veſiculæ of the lungs, and hindering the free ingreſs and egreſs of the air through them. Another is owing to the convulſive contraction of the parts deſigned for reſpiration, and proceeds from various cauſes, both within and without the thorax; and this is called the dry, flatulent, or convulſive aſthma.

The longer this diſeaſe continues, the more ſharp and violent all the ſymptoms become. The patient's body grows more coſtive, and the urine is thin and watery; moſt commonly the feet ſwell, then the hands, face, and back; there is a numbneſs of the arms; the countenance is wan and livid, or of a leaden colour; then comes on a little fever, which grows worſe in the evening; the whole body is cachectic, with an œdematus ſwelling of the feet; there is a dropſy of the breaſt, or an aſcites, or anaſarca; at leaſt there is a palſy on one ſide, or of the arm; or inſtead thereof, a palſy of the eye-lids. This diſeaſe is likewiſe called by ſome, a ſuffocating aſthma; by others the nervous aſthma.

When the diſeaſe is recent, and is owing only to the ſpaſmodic contraction of the præcordia, there are hopes of a cure; eſpecially if the matter of the gout, ulcers, and exanthemata, are ſent back to their proper ſeats. When the menſes or hæmorrhoids, which were ſtopped, return, it yields relief, and if the diſeaſe was not too far advanced, perfect health. If it is inveterate or ill-managed, it brings on a dropſy of the breaſt, obſtructions of the lower belly, œdematous ſwellings of the feet, a cachexy, and an univerſal dropſy. In general, all convulſive aſthmas portend a ſudden exit, or ſuffocation, eſpecially if there is a polypus of the heart; if it continues long, then the patient will die of the dropſy; in which caſe it will be ſoon fatal: when there is a ſlow fever, an unequal intermitting pulſe, a palſy of the arms, a continual palpitation of the heart, little urine, a ſyncope or ſwooning, then death is at hand. Some are carried off by an inflammation of the lungs, and the more grievous the diſeaſe, the more languid the pulſe. The aſthma, in old perſons, continues till death: that which is cauſed by a diſlocation of the vertebræ cannot be cured till they are reduced. The more violent the acceſſion, the longer it laſts, and the oftener it returns the greater the danger of ſuffocation.

In the paroxyſm, becauſe the body is generally bound, and the wind and humours are carried upwards, the ſpeedieſt aſſiſtance is from emollient and carminative clyſters.

If there is occaſion, it may be repeated two or three times: afterwards uſe frictions of the feet, which have an incredible efficacy; alſo let them be put into warm water; for the feet are almoſt always cold. When there is a violent ſpaſm about the præcordia, hot fomentations are neceſſary, or bladders filled with hot milk, and applied to the part affected; likewiſe nervous liniments are very uſeful, rubbed in with a warm hand.

Out of the fit, if it proceeds from too great a congeſtion of blood about the breaſt, or from a polypus of the heart, bleeding in the foot will be proper, as alſo ſcarifications; in a ſuppreſſion of the hæmorrhoids, leeches ſhould be applied to the anus; as alſo gentle laxatives to cleanſe the primæ viæ: likewiſe bodily motion, ſlender diet, and ſoft drink. If there are hypochondriacal or flatulent ſymptoms, then gentle laxatives will be the more neceſſary, together with clyſters. When the menſes or hæmorrhoids are ſuppreſſed, then nothing is better than the Bath waters, both for bathing and drinking; or the waters of Selters taken warm and mixed with milk.

When the aſthma proceeds from the driving back ſome impure matter from the ſkin, or from the drying up of ulcers, and the humour is tranſlated to the nervous parts of the breaſt, then gentle diaphoretics will be neceſſary to ſend it back to the ſuperfices of the body.

ASTRÆA, in mythology, the goddeſs of Juſtice, the daughter of Jupiter and Themis, and came down from heaven in the golden age; but when the manners of men became corrupt, ſhe left the earth and returned to heaven.

ASTRAGAL, in architecture, a ſmall round moulding, in the form of a ring, ſerving as an ornament at the tops and bottoms of columns. Sometimes the aſtragal ſerves to ſeparate the faſciæ of the architrave; but then it is wrought in the form of a chaplet, compoſed of beads and berries. It is alſo uſed both above and below the liſts, adjoining immediately to the die or ſquare of the pedeſtal.

ASTRAGAL, in anatomy, the bone of the heel, having a convex head, articulated to the tibia by ginglymus.

ASTRAGAL, in gunnery, the cornice ring of a piece of ordnance.

ASTRAGULUS, milk-vetch, in botany, a genus of plants ſaid to be diuretic, and to increaſe the milk of nurſes.

ASTRINGENTS, among phyſicians, ſuch medicines as are of an aſtringent or binding quality. Hoffman very judiciouſly obſerves, that aſtringents are very proper to reſtore a tone and elaſticity to the animal fibres, when debilitated by diſeaſes, intemperance, or accident: but they are very ſeldom proper without a previous attenuation of the juices, and a courſe of deobſtruent medicines; becauſe obſtructions are more firmly rivited, and the viſcid juices circulated with more difficulty, when the diameters of the veſſels are conſtricted by aſtringents.

ASTRORITES, the ſtar-ſtone, in natural hiſtory; ſee the article STAR-STONE.

ASTROLABE, among the ancients, ſignified the ſame with what we now call an armillary Sphere. See ARMILLARY *Sphere.*

ASTROLABE is alſo a name for the ſtereographic projection of the ſphere, either on the plane of the equator, or the meridian.

ASTROBLAE, an inſtrment formerly uſed for taking the altitude of the ſun or ſtars at ſea.

ASTROLOGICAL, ſomething belonging to aſtrology.

ASTROLOGY, a fallacious art, pretending to fortel future events from the ſituation, different aſpects, &c. of the heavenly bodies.

Aſtrology may be divided into two branches, natural and judicary; the former being the prediction of natural effects, as the changes of weather, winds, ſtorms, hurricanes, thunder, floods, earthquakes, &c. and the latter that which pretends to foretel moral events, or ſuch as have a dependence on the freedom of the will.

ASTRONOMICAL, ſomething relating to aſtronomy.

ASTRONOMICAL *Calendar*, an inſtrument engraved on copper plates, printed upon paper, and paſted on a board, with a braſs ſlider carrying a hair, and ſhews by inſpection the ſun's meridian altitude, right aſcenſion, declination, riſing, ſetting, amplitude, &c. to a greater degree of exactneſs than the common globes.

ASTRONOMICAL *Hours*, the ſame with equal hours, twenty-four of which make a natural day.

ASTRONOMICAL *Quadrant*, an inſtrument contrived for taking the altitude, &c. of the heavenly bodies, in a very accurate manner. See *Aſtronomical* QUADRANT.

ASTRONOMICAL *Sector*, a uſeful mathematical inſtrument, invented by the late ingenious Mr. Graham.

The lovers of aſtronomy are much obliged to the late ingenious Mr. Graham, F. R. S. not only for many uſeful improvements in the mechaniſm of ſeveral aſtronomical inſtruments, but alſo for contriving this very commodious and accurate one for the purpoſe of taking ſuch differences of right aſcenſion and declination as are too large to be obſerved through a fixed teleſcope; and yet with equal facility and exactneſs too in proportion to the radius of the inſtrument.

Let A B (plate VII. *fig.* 3.) repreſent an arch of a circle, containing ten or twelve degrees well divided, having a ſtrong plate C D for its radius, fixed to the middle of the arch at D: let this radius be applied to the ſide of an axis H F I, and be moveable about a joint fixed to it at F, ſo that the plane of the ſector may be always parallel to the axis H I; which being parallel to the axis of the earth, the plane of the ſector will always be parallel to the plane of ſome hour-circle. Let a teleſcope C E be moveable about the center C of the arch A B, from one end of it to the other, by turning a ſkrew at G; and let the line of ſight be parallel to the plane of the ſector. Now, by turning the whole inſtrument about the axis H I, till the plane of it be ſucceſſively directed, firſt to one of the ſtars, and then to another, it is eaſy to move the ſector about the joint F, into ſuch a poſition, that the arch A B, when fixed, ſhall take in both the ſtars in their paſſage, by the plane of it, provided the difference of their declinations does not exceed the arch A. B. Then, having fixed the plane of the ſector a little to the weſtward of both the ſtars, move the teleſcope C E by the ſkrew G; and obſerve, by a clock, the time of each tranſit over the croſs hairs, and alſo the degrees and minutes upon the arch A B, cut by the index at each tranſit; then, in the differences of the arches, the difference of the declinations, and by the difference of the times, we have the difference of the right aſcenſions of the ſtars.

The dimenſions of this inſtrument are theſe: the length of the teleſcope, or the radius of the ſector, is $2\frac{1}{2}$ feet; the breadth of the radius, near the end C, is $1\frac{1}{4}$ inch; and at the end D two inches. The breadth of the limb A B is $1\frac{1}{2}$ inch; and its length ſix inches, containing ten degrees divided into quarters, and numbered from either end to the othrr. The teleſcope carries a nonius or ſubdividing plate, whoſe length being equal to ſixteen quarters of a degree, is divided into fifteen equal parts; which, in effect, divides the limb into minutes, and by eſtimation, into ſmaller parts. The length of the ſquare axis H I F is eighteen inches, and of the part H I twelve inches; and its thickneſs is about a quarter of an inch: the diameters of the circles are each five inches: the thickneſs of the plates, and the other meaſures, may be taken at the direction of a workman.

This inſtrument may be rectified, for making obſervations, in this manner: by placing the interſection of the croſs hairs at the ſame diſtance from the plane of the ſector, as the center of the object-glaſs, the plane deſcribed by the line of ſight, during the circular motion of the teleſcope upon the limb, will be ſufficiently true, or free from conical curvity; which may be examined by ſuſpending a long plumb-line at a convenient diſtance from the inſtrument; and by fixing the plane of the ſector in a vertical poſition, and then by obſerving, while the teleſcope is moved by the ſkrew along the limb, whether the croſs hairs appear to move along the plumb-line.

The axis $b\ f\ o$ (*fig.* 4.) may be elevated nearly parallel to the axis of the earth, by means of a ſmall common quadrant; and its error may be corrected, by making the line of ſight follow the circular motion of any of the circum-polar ſtars, while the whole inſtrument is moved about its axis, $b\ f\ o$, the teleſcope being fixed to the limb: for this purpoſe, let the teleſcope $k\ l$ be directed to the ſtar a, when it paſſes over the higheſt point of its diurnal circle, and let the diviſion cut by the nonius, be then noted: then, after twelve hours, when the ſtar comes to the loweſt point of its circle, having turned the inſtrument half round its axis, to bring the teleſcope into the poſition $m\ n$; if the croſs hairs cover the ſame ſtar ſuppoſed at b, the elevation of the axis $b\ f\ o$ is exactly right; but if it be neceſſary to move the teleſcope into the poſition $u\ v$, in order to point to this ſtar at c, the arch $m\ u$, which meaſures the angle $m\ f\ u$ or $b\ f\ c$, will be known; and then the axis $b\ f\ o$ muſt be depreſſed half the quantity of this given angle, if the ſtar paſſed below b, or muſt be raiſed ſo much higher, if above it; and then the trial muſt be repeated till the true elevation of the axis be obtained. By making the like obſervations upon the ſame ſtar on each ſide the pole, in the ſix o'clock hour-circle, the error of the axis, toward the eaſt or weſt, may alſo be found and corrected, till the croſs hairs follow the ſtar quite round the pole: for ſuppoſing $a\ o\ p\ b\ c$ to be an arch of the meridian (or in the ſecond practice of the ſix o'clock hour-circle) make the angle $a\ f\ p$ equal to half the angle $a\ f\ c$, and the line $f\ p$ will point to the pole; and the angle $o\ f\ p$, which is the error of the axis, will be equal to half the angle $b\ f\ c$ or $m\ f\ u$, found by the obſervation; becauſe the difference of the two angles $a f b$, $a f c$ is double the difference of their halves $a\ f\ o$ and $a\ f\ p$. Unleſs the ſtar be very near the pole, allowance muſt be made for refractions.

ASTRONOMY, the ſcience which treats of the heavenly bodies; their magnitudes, diſtances, motions, eclipſes, conjunctions, &c.

Of all the ſciences cultivated by mankind, aſtronomy is acknowledged to be the moſt ſublime, the moſt intereſting, and the moſt uſeful: or, by the knowledge derived from this ſcience, not only the bulk of the earth is diſcovered, the ſituation and extent of the countries and kingdoms upon it aſcertained, trade and commerce carried on to the remoteſt parts of the world, and the various products of ſeveral countries diſtributed for the health, comfort, and conveniency of its inhabitants ; but our very faculties are enlarged with the grandeur of the ideas it conveys, our minds exalted above the low contracted prejudices of the vulgar, and our underſtandings clearly convinced, and affected with the conviction of the exiſtence, wiſdom, power, goodneſs, and ſuperintendency of the Supreme Being!

From this branch of knowledge, we learn by what means or laws the Almighty carries on, and continues the admirable harmony, order, and connexion obſervable throughout the planetary ſyſtem ; and are led by very powerful arguments to form the pleaſing deduction, that minds capable of ſuch deep reſearches, not only derive their origin from that adorable Being, but are alſo incited to aſpire after a more perfect knowledge of his nature, and a ſtricter conformity to his will.

By aſtronomy we diſcover that the earth is at ſo great a diſtance from the ſun, that if ſeen from thence it would appear no bigger than a point, although its circumference is known to be 25,020 miles : yet that diſtance is ſo ſmall compared with the diſtance of the fixed ſtars, that if the orbit in which the earth moves round the ſun were ſolid, and ſeen from the neareſt ſtar, it would likewiſe appear no bigger than a point, although it is at leaſt 162 millions of miles in diameter : for the earth in going round the ſun is 162 millions of miles nearer to ſome of the ſtars at one time of the year than at another ; and yet their apparent magnitudes, ſituations, and diſtances from one another ſtill remain the ſame ; and a teleſcope which magnifies above 200 times does not ſenſibly magnify them ; which proves them to be at leaſt four hundred thouſand times farther from us than we are from the ſun.

It is not to be imagined that all the ſtars are placed in one concave ſurface, ſo as to be equally diſtant from us ; but that they are ſcattered at immenſe diſtances from one another through unlimited ſpace : ſo that there may be as great a diſtance between any two neighbouring ſtars, as between our ſun and thoſe which are neareſt to him : therefore an obſerver, who is neareſt any fixed ſtar, will look upon it alone as a real ſun : and conſider the reſt as ſo many ſhining points, placed at equal diſtances from him in the firmament.

By the help of teleſcopes we diſcover thouſands of ſtars which are inviſible to the naked eye ; and the better our glaſſes are, ſtill the more become viſible : ſo that we can ſet no limits either to their number or their diſtances.

The ſun appears very bright and large in compariſon of the fixed ſtars, becauſe we keep conſtantly near the ſun, in compariſon of our immenſe diſtance from the ſtars : for a ſpectator placed as near to any ſtar as we are to the ſun, would ſee that ſtar a body as large and bright as the ſun appears to us : and a ſpectator as far diſtant from the ſun as we are from the ſtars, would ſee the ſun as ſmall as we ſee a ſtar, diveſted of all its circumvolving planets ; and would reckon it one of the ſtars, in numbering them.

The ſtars being at ſuch immenſe diſtances from the ſun, cannot poſſibly receive from him ſo ſtrong a light as they ſeem to have ; nor any brightneſs ſufficient to make them viſible to us : for the ſun's rays muſt be ſo ſcattered and diſſipated before they reach ſuch remote objects, that they can never be tranſmitted back to our eyes, ſo as to render theſe objects viſible by reflection. The ſtars therefore ſhine with their own native and unborrowed luſtre, as the ſun does ; and ſince each particular ſtar, as well as the ſun, is confined to a particular portion of ſpace, it is plain that the ſtars are of the nature with the ſun.

It is no ways probable that the Almighty, who always acts with infinite wiſdom, and does nothing in vain, ſhould create ſo many glorious ſuns, fit for ſo many important purpoſes, and place them at ſuch diſtances from one another, without proper objects near enough to be benefited by their influences. Whoever imagines they were created only to give a faint glimmering light to the inhabitants of this globe, muſt have a very ſuperficial knowledge of aſtronomy, and a mean opinion of the divine wiſdom ; ſince, by an infinitely leſs exertion of creating power, the Deity could have given our earth much more light by one ſingle additional moon.

Inſtead then of one ſun and one world only in the univerſe, as the unſkilful in aſtronomy imagine, that ſcience diſcovers to us ſuch an inconceivable number of ſuns, ſyſtems, and worlds, diſperſed through boundleſs ſpace, that if our ſun, with all the planets, moons, and comets belonging to it were annihilated, they would be no more miſſed out of the creation

tion than a grain of ſand from the ſea-ſhore; the ſpace they poſſeſs being comparatively ſo ſmall, that it would ſcarce be a ſenſible blank in the univerſe; although Saturn, the outermoſt of our planets, revolves about the ſun in an orbit of 4884 millions of miles in circumference, and ſome of our comets make excurſions upwards of ten thouſand millions of miles beyond Saturn's orbit; and yet, at that amazing diſtance, they are incomparably nearer to the ſun than to any of the ſtars, as is evident from their keeping clear of the attractivive power of all the ſtars, and returning periodically by virtue of the ſun's attraction.

From what we know of our ſyſtem, it may be reaſonably concluded that all the reſt are with equal wiſdom contrived, ſituated, and provided with accommodations for rational inhabitants.

To an attentive conſiderer, it will appear highly probable, that the planets, together with their attendants called ſatellites or moons, are much of the ſame nature with our earth, and deſtined for the like purpoſes: for they are ſolid opaque globes, capable of ſupporting animals and vegetables. Some of them are bigger, ſome leſs, and ſome much about the ſize of our earth. They all circulate round the ſun, as the earth does, in a ſhorter or longer time, according to their reſpective diſtances from him; and have, where it would not be inconvenient, regular returns of ſummer and winter, ſpring and autumn. They have warmer and colder climates, as the various productions of our earth require; and in ſuch as afford a poſſibility of diſcovering it, we obſerve a regular motion round their axis, like that of our earth, cauſing an alternate return of day and night, which is neceſſary for labour, reſt and vegetation, and that all parts of their ſurfaces may be expoſed to the rays of the ſun.

Such of the planets as are fartheſt from the ſun, and therefore enjoy leaſt of his light, have that deficiency made up by ſeveral moons, which conſtantly accompany and revolve about them, as our moon revolves about the earth. The remoteſt planet has, over and above, a broad ring encompaſſing it, which, like a lucid zone in the heavens, reflects the ſun's light very copiouſly on that planet: ſo that if the remoter planets have the ſun's light fainter by day than we, they have an addition made to it morning and evening by one or more of their moons, and a greater quantity of light in the night time.

On the ſurface of the moon, becauſe it is nearer us than any other of the celeſtial bodies are, we diſcover a nearer reſemblance to our earth: for by the aſſiſtance of teleſcopes we obſerve the moon to be full of high mountains, large valleys, and deep cavities. Theſe ſimilarities leave us no room to doubt but that all the planets and moons in the ſyſtem are deſigned as commodious habitations for creatures endowed with capacities of knowing and adoring their beneficent Creator.

Since the fixed ſtars are prodigious ſpheres of fire, like our ſun, and at inconceivable diſtances from one another, as well as from us, it is reaſonable to conclude they are made for the ſame purpoſes that the ſun is; each to beſtow light, heat, and vegetation, on a certain number of inhabited planets, kept by gravitation within the ſphere of its activity.

What an auguſt! what an amazing conception, if human imagination can conceive it, does this give of the works of the Creator! Thouſands of thouſands of ſuns, multiplied without end, and ranged all around us, at immenſe diſtances from each other, attended by ten thouſand times ten thouſand worlds, all in rapid motion, yet calm, regular, and harmonious, invarably keeping the paths preſcribed them; and theſe worlds peopled with myriads of intelligent beings, formed for endleſs progreſſion in perfection and felicity.

If ſo much power, wiſdom, goodneſs, and magnificence, is diſplayed in the material creation, which is the leaſt conſiderable part of the univerſe, how great, how wiſe, how good muſt he be, who made and governs the whole!

It is not to be doubted but aſtronomy was invented from the beginning of the world. As there is nothing more ſurpriſing than the regularity of thoſe great luminous bodies, that turn inceſſantly round the earth, it is eaſy to judge, that one of the firſt curioſities of mankind was to conſider their courſes, and to obſerve the periods of them. But it was not curioſity only that induced men to apply themſelves to aſtronomical ſpeculations: neceſſity itſelf may be ſaid to have obliged them to it: for if the ſeaſons are not obſerved, which are diſtinguiſhed by the motion of the ſun, it is impoſſible to ſucceed in agriculture. If the times proper for making voyages were not previouſly known, commerce could not be carried on. If the duration of the month and year were not determined, a certain order could not be eſtabliſhed in civil affairs, nor the days allotted to the exerciſe of religion be fixed. Thus, as neither agriculture, commerce, polity, nor religion could diſpenſe with the want of aſtronomy, it is evident that mankind were obliged to apply themſelves to that ſcience from the beginning of the world. Accordingly from the moſt early times men of genus and learning have appeared, in different countries and ages, who applied themſelves to the ſtudy of aſtronomy, and made ſucceſſive improvements therein, 'till the great Sir Iſaac Newton, the glory of the nation, put the finiſhing hand, as we may ſay, to their labours, and carried the ſcience to an amazing degree of perfection.

ASTRONOMY is ſometimes divided into the *old* and the *new*.

The Old ASTRONOMY is that which ſuppoſes the earth fixed and quieſcent in the center, and that the heavenly bodies perform their revolutions round it. This hypotheſis is followed by Ptolemy in his Almageſt, and thence called the Ptolemaic Syſtem. See the article PTOLEMAIC *Syſtem*.

The New ASTRONOMY is that which has been generally followed ſince the time of Copernicus, who revived the Pythagorean or true ſolar Syſtem. See COPERNICAN *Syſtem*.

ASTROSCOPE, the name of an inſtrument compoſed of two hemiſpheres, having the conſtellations delineated on their ſuperficies.

* ASTYAGES, ſon of Cyaxares, and the laſt king of the Medes. He began his reign five hundred and ninety-five years before the Chriſtian æra. During the pregnancy of his daughter Mandana, who was the wife of Cambyſes, king of Perſia, he dreamt that he ſaw a vine ſpring out of her boſom, and extend its branches over all Aſia; which according to the interpretation of the magi, ſignified the child ſhe ſhould bring forth would ſubdue many kings. Mandana was delivered of Cyrus, when the king gave the infant to Harpagus his confident, with orders to put it to death; but Harpagus ſparing its life, Aſtyages was ſo enraged when he came to know it, that he made him eat the fleſh of his own ſon. Harpagus, to be revenged, called in Cyrus, who was now grown up, and who dethroned his grandfather, about five hundred and fifty-nine years before Chriſt.

ASYLUM, a ſanctuary, a place of refuge, or protection. Some pretend, the firſt aſylum in Greece was that eſtabliſhed by order of the oracle of Jupiter Dodonæns, who commanded the Athenians to grant their lives to all thoſe who fled for refuge into the Areopagus, or to the altars of the goddeſſes. But others ſay, the firſt aſylum was built at Athens by the Heraclidæ, and was a refuge for thoſe who fled from the oppreſſion of their fathers. This privilege began to be enjoyed by the Chriſtian churches about the time of Conſtantine; but whether that prince made any laws concerning it, is doubted by learned men; for none appear that are older than the time of Theodoſius. At firſt, only the altar and inward fabric of the church was a place of refuge; but afterwards any outer buildings, or precincts of the church, had the ſame privilege granted them; ſuch as the houſes or lodgings of the biſhop and clergy, gardens, baths, courts, and cloyſters; and, in after-ages, this exemption was extended to the graves and ſepulchres of the dead, to croſſes, ſchools, monaſteries, and hoſpitals. This privilege, originally, was not intended to patronize wickedneſs, or ſcreen the guilty from juſtice: but as a refuge for the innocent, the injured, and the oppreſſed; or, in doubtful caſes, to give men protection, till they might obtain an equitable and fair hearing; in all ſuch caſes they were allowed thirty days protection. But that no one might expect this indemnity who had not a juſt and legal title to it, ſeveral crimes and caſes were excepted by law, for which the church could grant no protection.

ASYMPTOTES, in geometry, ſtraight lines which conſtantly approach nearer and nearer to the curve they are ſaid to be aſymptotes of: but if they and their curve are indefinitely continued, they will never meet; or aſymptotes are tangents to their curves at an infinite diſtance. Two curves are alſo ſaid to be aſymptotical, when they continually approach to one another, but if infinitely continued, can never meet; as two parabolas that have their axis placed in the ſame right line, are aſymptotical to each other. Of curves of the firſt order, that is, the conic ſections, only the hyperbola has aſymptotes, being two in number. All curves of the ſecond order have at leaſt one aſymptote; but they may have three: and all curves of the fourth order may have four aſymptotes. The conchoid, ciſſoid, and logarithmic curve, have each one aſymptote. See CURVE, HYPERBOLA, &c.

ASYMPTOTIC, ſomething relating to aſymptotes.

ASSYNDETON, in grammar, a figure which omits the conjunctions in a ſentence.

* ATALANTA, in fabulous hiſtory, the daughter of Schnœus, king of Scyros, ſhe was ſought for in marriage by ſeveral young princes, to whom her father had promiſed her, on condition they could conquer her in a race. Hippomenes alone had the happineſs to obtain her; for, by the advice of Venus, he threw, as they were running, three golden apples out of the courſe, and Atalanta running out of his way to take them up, Hippomenes gained the prize; but afterwards they neglecting to pay their offerings to Venus, ſhe ſhewed her reſentment by infatuating them to ſuch a degree, that they lay together in the temple of Cybele, who, for that profanation turned them into lions.

ATCHIEVEMENT, in heraldry, the arms of a perſon, or family, together with all the exterior ornaments of the ſhield, as helmet, mantle, creſt, ſcrolls, and motto, together with ſuch quarterings as may have been acquired by alliances, all marſhalled in order.

* ATE, in heathen mythology, a Goddeſs, who perverted men's underſtanding, clouded their reaſon, and delighted herſelf in involving them in misfortunes and engaging them in quarrels. There was no way to be ſecured from her, but by having recourſe to the Lites, the daughters of Jupiter.

Ate, according to ſome, is the evil actions committed by mankind, which are the real ſources of all our troubles and misfortunes; and the Lites are the prayers we ought to uſe in our calamities.

* A TEMPO GIUSTO, in muſic, ſignifies to ſing or play in an equal, true, and juſt time.

ATHAMADULET, the prime miniſter of the Perſian empire, as the grand vizier is of the Turkiſh empire.

* ATHANASIUS (St.) biſhop of Alexandria, was one of the greateſt defenders of the faith againſt the Arians, and was born in Egypt. He followed St Alexander to the council of Nice, in 325, where he diſputed againſt Arius, and the next year was made biſhop of Alexandria, but, in 335, was depoſed by the council of Tyr. The emperor, two years after, gave orders that he ſhould be reſtored to his biſhopric; but on his return to Alexandria, his enemies brought freſh accuſations againſt him, and choſe Gregory of Cappadocia to his ſee, which obliged Athanaſius to go to Rome to reclaim it of Pope Julius. He was there declared innocent, in a council held in 342, and in that of Sardica in 347, and two years after was reſtored to his ſee by order of the emperor Conſtans; but after the death of that prince, he was again baniſhed by the emperor Conſtantius, which obliged him to retire into the deſerts. He addreſſed to the emperor Julian a letter, in which he propoſed that the Nicene creed ſhould be the ſtandard of the orthodox faith, and condemned thoſe who denied the divinity of the Holy Ghoſt. He was alſo baniſhed by Valens, in 367, and afterwards recalled. St. Athanaſius died on the 2d of May, 373.

His works principally contain a defence of the myſtery of the Trinity, and of the incarnation and divinity of the Word and Holy Spirit. It is now generally allowed by the learned, that St. Athanaſius was not the author of the creed, which bears his name, it not being mentioned, by any author, for ſeveral hundred years after his death.

ATHANASIAN CREED, that ſuppoſed to be compoſed by Athanaſius. See CREED.

ATHANOR, in chemiſtry, a kind of fixed and large digeſting furnace, made with a tower, contrived to keep a conſtant moderate heat for a conſiderable time, which may be increaſed or diminiſhed at pleaſure, by ſhutting the regiſters.

ATHEIST, one who denies the exiſtence and providence of God, and conſequently has no religion at all, true or falſe.

The word is formed from the Greek, *alpha*, priv. and *theos*, God.

There is no room to doubt, whether there ever were thinking men, who have actually reaſoned themſelves into the diſbelief of a deity. Among the ancients, indeed, we read of Theodorus of Cyrene, and Diagoras the Melian, both profeſſed atheiſts; the latter of whom ſet up a ſchool of atheiſm at Athens, for which he was proſecuted by the Athenians; but by flying out of the country, he eſcaped the puniſhment of death intended for him. About twenty years before, they had proceeded againſt Protagoras, another philoſopher, for only doubting of the being of God. Both theſe had been the ſcholars of Democritus, the firſt founder of the atomical philoſophy, which is in its conſequences an atheiſtical ſcheme: for though it allows the being of a God in name, yet by denying his providence, it denies his exiſtence in effect. It is however probable, that theſe philoſophers were not, properly ſpeaking, atheiſts, but branded as ſuch by the pagans, for denying the divinity of their falſe gods.

Plato diſtinguiſhes three ſorts of atheiſts: ſuch as deny abſolutely that there are any gods: others who allow the exiſtence of the gods, but deny that they concern themſelves with human affairs, and ſo diſbelieve a providence: and laſtly, ſuch as believe in the gods, and a providence, but think that they are very eaſily appeaſed, and remit the greateſt crimes for the ſmalleſt ſupplication. The firſt of theſe are only the true atheiſts, in the ſtrict and proper ſenſe of the word.

* ATHELSTAN, or ÆTHESTAN, (ſon of Edward ſurnamed the Elder, king of the Weſt Saxons, and of Edgina, a ſhepherd's daughter,) ſucceeded his father in 924; he defeated Anlaff, king of Northumberland, whoſe army conſiſted of Scots, Picts, Danes, and Norwegians, and obtained ſuch reputation, that the emperor Henry, ſirnamed the Fowler, ſent to demand one of his ſiſters in marriage for his ſon Otho: Hugo, king of the Franks, alſo deſired another for his ſon; and Lewis, prince of Aquitain, ſent an ambaſſy to deſire a third for himſelf. He was equally ſucceſsful againſt the Welſh, for having beaten them in the field, he cauſed Ludwal, king of Wales, with his petty princes, to meet him at Hereford, where they did him homage, and promiſed to pay him a yearly tribute. The greateſt blemiſh in the reign of Athelſtan, is ſuppoſed to be his treatment of his brother Edwin, whom he ſuſpected of having a deſign to deprive him of his crown; for it is certain, he cauſed him to be put on board a leaky ſhip, with his armour bearer and page, when the young prince, unable to bear the ſeverity of the weather and want of food, drowned himſelf. Athelſtan, however, formed many wiſe laws, and rendered himſelf much admired on account of his wiſdom, wealth, and the extent of his dominions. He reigned about ſixteen years, and died at Glouceſter in 942.

* ATHEMENES, in fabulous hiſtory, ſon of Catreus, king of Crete, who was informed by an oracle that he ſhould kill his father, he therefore left him, and retired to Rhodes, where he built the temple of Atamyrius, upon a mountain of the ſame name; when his father coming thither in ſearch of him, he killed him without knowing him.

ATHEROMA, in ſurgery, a tumour without pain, or diſcoloration of the ſkin, containing, in a membraneous bag, matter reſembling pap, intermixed with hard and ſtony particles. Theſe tumours are eaſily cured by inciſion.

ATHLETÆ, in antiquity, perſons of ſtrength and agility, properly diſciplined for performing in the public games.

Under the name athletæ were comprehended wreſtlers, boxers, runners, leapers, throwers of the diſcus, and thoſe practiſed in other exerciſes exhibited at the Olympic, Pythian, and other ſolemn games.

ATHWART, in navigation, a-croſs; as athwart hawſe, a ſhip is ſaid to lie in that poſition when ſhe bears with her ſide againſt another's ſtem.

ATHWART *the Fore-foot*, is a ſhot generally ſo directed to ſtop a ſhip, and make her remain with her ſails ſlacked, till ſhe is examined; and is levelling the ſhot ſo that it may fall directly under the prow or ſtem.

ATHWART *Ships*, reaching from one end to the other.

ATLANTIDES, in aſtronomy, the ſame with Pleiades. See PLEIADES.

* ATLAS, in fabulous hiſtory, the ſon of Jupiter and Clymene, and the brother of Prometheus. On the diviſion of his father's dominions, Mauritania fell to his ſhare, on which he gave his own name to the mountain which is ſtill called Atlas. He was much ſkilled in aſtronomy, and by his inventing the ſphere, gave riſe to the fable of his ſupporting the heavens on his ſhoulders.

Ovid ſays, that Atlas was the ſon of Japetus and Aſia; that he was the proprietor of the garden which bore golden fruit; but being warned by the oracle of Themis, that he ſhould ſuffer from one of Jupiter's ſons, he forbad all foreigners his court or preſence. Perſius however boldly appeared before him, but was ordered to retire with menances in caſe of diſobedience. When the hero preſenting his ſhield, with the dreadful head of Meduſa, transformed him into the mountain which is ſtill called by his name.

ATLAS, in anatomy, the name of the firſt vertebra of the neck, or that which ſupports the head.

ATLAS, in architecture, a name given to thoſe whole or half figures of men, ſometimes uſed inſtead of columns or pilaſters to ſupport any member in architecture. They are ſometimes called Telamones.

ATLAS, in matters of literature, a book of univerſal geography, containing maps of all the known parts of the world.

ATMOSPHERE, in phyſiology, the vaſt body or collection of air that ſurrounds the earth to a very conſiderable height.

Height of the ATMOSPHERE.---The modern naturaliſts have been very ſollicitous to determine the height of the atmoſphere; a problem very difficult to be ſolved, becauſe of the elaſticity of the air, which renders its denſity different at different altitudes from the earth's ſurface: for the lower parts of the air, being preſſed by the weight of the ſuperior parts, muſt approach nearer to each other; and this approximation will be proportional to the weight of the incumbent air; whence it follows, that the denſity of the air is greateſt at the earth's ſurface, and decreaſes upwards in a geometrical progreſſion to the altitudes taken in arithmetical progreſſion. It muſt alſo be obſerved that the rarity of the air cannot proceed *ad infinitum*, but has its limit from gravity: for though the rarefaction of the air be ſtill greater, as its diſtance from the ſurface of the earth increaſes, its ſpring at length will be ſo weakened, that the force by which the particles tend upwards from thoſe next below them, will be leſs than the force of gravity, by which they tend downwards; conſequently the rarefaction of the atmoſphere muſt be bounded where thoſe oppoſite forces are equal to each other. Were the atmoſphere of an equal denſity throughout, the height of the atmoſphere might be eaſily determined; for it has been found, by experiment, that the length of a column of air ſeventy-two feet high, is equal in weight to a column of water of the ſame baſe, and one inch in height; conſequently the denſity of air is to that of water as 1 to 864. It has alſo been found, by experiment, that the weight of a column of air extending to the top of the atmoſphere, is equal in weight to a column of water of the ſame baſe, and 32 feet or 384 inches high. If therefore we multiply 864 by 384, we ſhall have 331776 inches, or ſomething above five miles, for the height of the atmoſphere, provided its denſity was every where the ſame.

But ſince the denſity of the atmoſphere decreaſes with the preſſure, it will be more rarefied and expanded the higher we go; and therefore the altitude of the atmoſphere becomes indefinite, terminating in pure æther. One principal effect of the air, however, being the refraction of light, whoſe particles are the ſmalleſt of any we know of in nature, it is reaſonable to fix the boundary of the atmoſphere in the altitude where it begins to have the power of producing this leaſt effect in nature, viz. the refracting a ray of light.

Preſſure of the ATMOSPHERE.---It has been already obſerved, that the weight of a column of air, extending to the boundary of the atmoſphere, is equal to the weight of a column of water of the ſame baſe, and 32 feet high: and hence the weight of any part, or of the whole atmoſphere may be determined: but this fluid is ſo ſubject to change, that it is hardly poſſible to find an equal quantity of air at different times, in the ſame place, of equal weight. This variation is very apparent when there is any alteration in the meteors in the air: for rain, ſudden fierce ſhowers, fogs, hail, ſnow, lightning, thunder, winds, from various quarters, ſtorms, whirlwinds, drought, &c. are certan indications that the atmoſphere will ſoon become of a different weight. The different ſeaſons of the year alſo produce an almoſt incredible variation. Hence an infinite number of effects, depending on the action of the gravity of the air, are in a perpetual viciſſitude and inconſtancy. Accurate obſervations, however, continued almoſt a century, have at laſt enabled us to determine the greateſt and leaſt gravity of the air known in Europe: for it has been found that the greateſt weight of the atmoſphere is in equilibro with 31 inches of mercury in the barometer, while the leaſt is only equal to 27; ſo that the difference is almoſt a tenth part of its greateſt weight; and between thoſe limits the variation of the atmoſphere's weight is included. We may therefore take 29 inches for the mean altitude of the mercury, and conſequently its weight for the mean weight of a column of air of the ſame baſe. See AIR. Hence the difference of preſſure on the body of a man, allowing it to contain 14 ½ ſquare feet, will be nearly equal to 3980 pounds troy. This remarkable difference muſt greatly affect the animal functions, and conſequently our health. If a perſon, for inſtance, be aſthmatical, he will find his diſorder increaſe with the levity of the air; for ſince a pure, denſe, elaſtic air is alone capable of diſtending his lungs in reſpiration, it will be leſs capable of performing the ſame office, when its weight and elaſticity were decreaſed; and conſequently the valetudinarian will find his difficulty of breathing increaſe in proportion. It is common to conſider the air as heavieſt in foggy weather: but the contrary is true; for the air is actually heavieſt in fine clear weather. The reaſon for this error flows from our miſtaking the cauſe. When the fibres and nerves are braced and conſtringed by the great preſſure of the air, the blood veſſels act with their full power and natural vigour, a proper velocity is given to the fluids, and a greater momentum to overcome obſtructions in the capillaries. Hence we find ourſelves alert and light, and thence fancy that the air is light alſo. On the contrary, when this preſſure is leſſened by near 3980 pounds, the fibres are relaxed, the contractile force of the veſſels diminiſhed, a languid circulation enſues, obſtructions, &c. happen, and produce agues, fevers, aches, &c. in ſome; and in all, a ſort of indolence, or gloomy inactivity, and heavineſs; conſequences which we imagine reſult from the heavineſs of the air: whereas they, in reality, flow from its levity.

Refractive Power of the ATMOSPHERE. It is the atmoſphere that makes the face of the heaven or firmament appear lucid and bright while the ſun ſhines; for if no atmoſphere ſurrounded and involved the earth, only that part of the heavens in which the ſun was placed, would appear to ſhine; and a ſpectator, if he ſhould turn his back to the ſun, would immediately perceive it as dark as night; and even in the day-time, while the ſun ſhined, the leaſt ſtars would be ſeen as plainly as in the darkeſt night, becauſe there would be no ſubſtance to reflect the ſun's rays to our eyes; and all the rays that do not fall upon the ſurface of the earth paſſing by us, would either illuminate the planets and ſtars, or ſpreading themſelves out in infinite ſpace, would never by reflected back to us. But ſince there is an atmoſphere ſurrounding the earth, which is ſtrongly illuminated by the ſun, it reflects the light back to us, and cauſes the whole heavens to ſhine with ſuch ſplendor, as to obſcure the faint light of the ſtars, and render them inviſible.

ATOM, in philoſophy, an indiviſible particle, or corpuſcle of matter. Atoms are properly the *minima naturæ*, the leaſt particles into which bodies are diviſible; and are conceived to be the firſt rudiments, or component parts of all phyſical magnitude; or the pre-exiſtent and incorruptible matter whereof bodies are formed. The notion of atoms riſes from a ſuppoſition, that matter is not diviſible *ad infinitum*. And hence the Peripatetics are led to deny the reality of atoms. An atom, ſay they, either has parts, or it has not: if it has no parts, it is a mere mathematical point; if it has, theſe parts muſt alſo conſiſt of others, and ſo on to infinity. But this is to recede from the genuine characters of atoms, which are not eſteemed indiviſible from their want of parts (for all phyſical magnitude muſt have three dimenſions, length, breadth, and thickneſs; and all extenſion is diviſible); but they are indiviſible on account of their ſolidity, hardneſs, and impenetrability, which preclude all diviſion, and leave no vacancy for the admiſſion of any foreign force to ſeparate or diſunite them.

ATOMICAL *Philoſophy*, the doctrine of atoms; or the method of accounting for the origin and formation of things from the ſuppoſition of atoms being endued with gravity and motion.

ATRA BILIS, black bile, among the ancient phyſicians, implied one of the humours of the body; the moderns call it melancholy. See MELANCHOLY.

A-TRIP, in navigation, a ſhip's top-ſails are ſaid to be a-trip when they are hoiſted up to their full extent, or to the maſt-head.

A-TRIP, the anchor is ſo called, when the ſhip, in a perpendicular direction, drags or heaves it out of the ground.

ATROPHY, in phyſic, an univerſal conſumption, proceeding from the whole habit of body, and not from any diſtemper of the entrails; it is attended with no remarkable fever, and is natural in old age. An atrophy is either nervous, or the effect of immoderate evacuation. A nervous atrophy owes its origin to a bad and morbid ſtate of the ſpirits, or to a weakneſs or deſtruction of the tone of the nerves. An atrophy from inanition proceeds by a preternatural defect or ſubſtraction of the nutritious juice, which varies according to the different outlets of the body, whether by nature or art. See CONSUMPTION.

ATTACHMENT, in law, the taking or apprehending a perſon by virtue of a writ or precept. It is diſtinguiſhed from an arreſt, by proceeding out of a higher court by precept or writ; whereas the latter proceeds out of an inferior court by precept only. An arreſt lies only on the body of a man; whereas an attachment lies often on the goods only, and ſometimes on the body and goods. An attachment by writ differs from diſtreſs, in not extending to lands, as the latter does; nor does a diſtreſs touch the body as an attachment does. In the common acceptation, an attachment implies the apprehenſion of a man's body, in order to his anſwering the action of the plaintiff.

ATTACHMENT *out of the Court of Chancery* is obtained upon an affidavit made, that the defendant was ſerved with a ſubpœna, and made no appearance; or it iſſueth upon not performing ſome order or decree. Upon the return of this attachment by the ſheriff, *quod non eſt inventus in balliva ſua*, another attachment, with a proclamation, iſſues; and if he ſtill refuſes to appear, a commiſſion is iſſued.

ATTACHMENT *of Privilege*, is by virtue of a man's privilege to call another to that court whereto he himſelf belongs, and in reſpect whereof he is privileged to anſwer ſome action.

Foreign ATTACHMENT, an attachment of money or goods found within a liberty or city, to ſatisfy ſome creditor within ſuch liberty or city.

By the cuſtom of London, and ſeveral other places, a man can attach money or goods belonging to his debtor, in the hands of a ſtranger, to ſatisfy himſelf.

ATTACK, a violent attempt upon any perſon or thing, an aſſault, or the act of beginning a combat, or diſpute.

ATTACK, a military term, is an effort made to force a poſt, break a body of troops, &c.

ATTACK *of a Siege*, is a furious aſſault made by the beſiegers with trenches, covers, mines, &c. in order to make themſelves maſters of a fortreſs, by ſtorming one of its ſides. If there are two or three attacks made at the ſame time, there ſhould be a communication betwixt them.

ATTAINDER, in law, is when a perſon has committed felony or treaſon, and ſentence is paſſed upon him for the ſame. The children of a perſon attainted of treaſon, are thereby rendered incapable of being heirs to him, or to any other anceſtor; and if he were noble before, his poſterity are degraded and made baſe: nor can this corruption of blood be ſalved, but by an act of parliament, unleſs the ſentence be reverſed by a writ of error.

Attainder is two-fold, either by appearance, or by proceſs.

ATTAINDER by appearance, is either by battle, by confeſſion, or by verdict. By battle, is when the party appealed by another, chooſing rather to try the truth by combat than by jury, is vanquiſhed. Attainder by confeſſion, is either by pleading guilty at the bar, and not putting himſelf upon trial by the jury, or before the coroner in ſanctuary, where, in ancient times, he was obliged to renounce the realm.

ATTAINDER by verdict, is when the priſoner at the bar pleads not guilty to the indictment, and is pronounced guilty by the jury.

ATTAINDER by proceſs, or attainder by default, is where a party flies, or does not appear after being three times publicly called in the county-court, and at laſt, upon his default, is pronounced guilty.

Bill of ATTAINDER, a bill brought into parliament for attainting, condemning, and executing a perſon for high treaſon.

ATTAINT, in law, a writ againſt a jury that have given a falſe verdict in any court of record, in a real or perſonal action, where the debt or damages amount to above forty ſhillings. If the verdict be found falſe, the judgment, by common law, was, that the jurors meadows ſhould be plowed up, their houſes broken down, their woods grubbed up, all their lands and tenements forfeited, &c. but by ſtatute the ſeverity of the common law is mitigated where a petty jury is attainted, and there is a pecuniary penalty appointed. But if the verdict be affirmed, ſuch plaintiff ſhall be impriſoned and fined.

ATTAINT, among farriers, a knock or hurt in a horſe's leg, either from a blow with another horſe's foot, or from an over-reach in froſty weather, when a horſe being rough-ſhod, &c. ſtrikes his hinder feet againſt his fore-legs.

ATTAINTED, in law, is applied to a perſon found guilty of any crime or offence, eſpecially of treaſon or felony, by due courſe of law.

ATTENTION, the applying either the ear or the mind aſſiduouſly to any thing ſaid or done, in order to underſtand it.

To increaſe attention we muſt baniſh every thing that may interrupt it, and ſeek every means to ſtrengthen and aſſiſt it. All, therefore, who would apply themſelves ſtrenuouſly to the diſcovery of truth, ſhould be careful to avoid ſtrong and immoderate ſenſations, a great noiſe, a glaring light, exceſs of grief, or joy, &c. they ought to keep their imagination free from any thing that weakens or diſquiets the mind. They ought eſpecially to controul their paſſions, which, let looſe, make very powerful impreſſions on the ſoul and body, and exerciſe a ſtrange dominion over both; yet the paſſions and the ſenſes may be made of uſe to preſerve our attention; as, for inſtance, a deſire of diſcovering truth, rendering ourſelves uſeful to our neighbours, and improving ourſelves, is highly laudable, and tends to fix our attention; but our attention is fixed alſo by motives much leſs generous and noble, a thirſt of fame, deſire of riches, nay, even vanity. Attention is, in ſhort, a habit of the mind, and the power of it may be acquired, but depends in ſome meaſure on the conſtitution.

ATTENUANTS, in pharmacy, medicines which reſolve the viſcinity of the humours in the human body, and promote their free circulation, and at the ſame time diſcharge all noxious matter. The word is formed from the Latin, *ad*, and *tenuo*, to render ſmall.

* ATTERBURY (FRANCIS) biſhop of Rocheſter, was the ſon of Dr. Lewis Atterbury, and was born at Middleton, near Newport-Pagnel, in Buckinghamſhire. He was educated at Weſtminſter ſchool, and in 1680, elected a ſtudent of Chriſt-Church college, Oxford, where he ſoon diſtinguiſhed himſelf by the elegance and vivacity of his wit, and his fondneſs for polite learning. On his taking holy orders, he ſo diſtinguiſhed himſelf by the elegance of his ſermons, that he was appointed one of the chaplains in ordinary to king William and queen Mary. He exerted himſelf in the controverſy with the papiſts, by writing an excellent defence of Luther; and engaged in ſeveral controverſies, particularly with Dr. Wake, in which he diſplayed ſo much learning, ingenuity, and zeal, for the intereſt of his order, that the lower houſe of convocation returned him thanks, and the univerſity of Oxford complimented him with the degree of doctor of divinity. Upon the acceſſion of queen Anne in 1702, he was appointed one of her majeſty's chaplains in ordinary; in 1704 he was advanced to the deanry of Carliſle; in 1707 he was appointed one of the canons reſidentiary of Exeter; in 1712 he was made dean of Chriſt-Church, and the next year biſhop of Rocheſter. During the rebellion in Scotland, in the firſt year of George the Firſt's reign, he refuſed to ſign the declaration of the biſhops, teſtifying their abhorrence of that rebellion, and an exhortation to the clergy and people under their care, to be zealous in the diſcharge of their duties to his majeſty king George. Dr. Atterbury conſtantly oppoſed the meaſures of the court in the houſe of lords, and drew up ſome of the moſt violent proteſts with his own hand. On the 24th of Auguſt 1722, he was apprehended on ſuſpicion of being concerned in a plot in favour of the Pretender, and carried before a committee of the privy council, who committed him priſoner to the Tower. On the 23d of March 1722-3, a bill was brought into the houſe of commons for inflicting certain pains and penalties on him, "for being principally concerned in forming, directing, and carrying on a wicked and deteſtable conſpiracy, for invading theſe kingdoms with a foreign force, and for raiſing inſurrections and a rebellion at home, in order to ſubvert our preſent happy eſtabliſhment in church and ſtate, by placing a popiſh pretender on the throne." This bill being paſſed by the commons, was, on the 9th of April, ſent up to the houſe of lords, for their concurrence, and at the firſt reading of it biſhop Atterbury was brought to Weſtminſter, to make his defence, when he had two counſel, and pleaded for himſelf in a long ſpeech. In ſhort, the bill was paſſed by the lords, by a very great majority, and was ſigned by the king, who expreſſed great concern at there being juſt cauſe of dooming to perpetual baniſhment a biſhop of ſuch eminent parts and learning. On the 18th of June, 1723, he embarked and landed at Calais, from whence he went to Bruſſels, and afterwards to Paris. He there wrote a vindication of himſelf, biſhop Smalridge, and Dr. Aldrich, from a charge brought againſt them by Mr. Oldmixon, of altering and interpolating the lord Clarendon's Hiſtory of the Rebellion. He died at Paris, Feb. 15, 1731, and his body was brought to England, and interred in Weſtminſter abbey. His ſermons are printed in four volumes octavo.

ATTESTATION, the act of affirming, or witneſſing the truth of ſomething, eſpecially in writing.

ATTIC, ſomething relating to Attica, or the city of Athens. Thus, attic ſalt, *ſales atticæ*, implies a delicate and poignant ſpecies of wit and humour peculiar to the Athenian writers.

ATTIC, in architecture, a ſort of building, the roof or covering of which is concealed; ſo called from the Athenian buildings, which were in general of this form.

ATTIC *Order*, in architecture, a ſmall order raiſed upon a large one, by way of crowning, or to finiſh the building.

ATTIC *Baſe*. See BASE.

ATTIRE, in hunting, the head or horns of a deer.

ATTITUDE, in painting and ſculpture, the geſture of a figure or ſtatue; or ſuch a diſpoſition of their parts as ſerves to expreſs the action and ſentiments of the perſon repreſented.

ATTOLLENS, in anatomy; ſee LEVATORES and ELEVATORES.

ATTORNEY, in a general ſenſe, one appointed by another to do ſomething in his ſtead.

ATTORNEY *at Law*, a perſon retained to proſecute or defend a law-ſuit. Attornies, being properly thoſe who ſue out writs, or proceſs, or commence, carry on, and defend actions, in any of the courts of common law, are diſtinguiſhed from ſollicitors, as the latter do the like buſineſs in the courts of equity; and none are admitted, either as an attorney or ſollicitor, unleſs they have ſerved a clerkſhip of five years, being enrolled, and taken the oath in that caſe provided; and the judges of their reſpective courts are required to examine their ſeveral capacities. By a late order of all the judges, all attornies are to be admitted of ſome inns of court or chancery (except houſe-keepers in London and Weſtminſter, &c.) and no attorney ſhall put himſelf out of that ſociety, into which he is admitted, till he is admitted to ſome other ſociety, and deliver a certificate thereof; and all attornies are to be in common at the times ordered by the ſociety to which they belong, otherwiſe ſhall be put out of the roll of attornies. Attornies may be puniſhed for ill practices; and if an attorney, or his clerks, of which he muſt have but two at one time, do any thing againſt the expreſs rules of the court, he or they may be committed. Attornies are liable to be puniſhed for the neglect of a client's cauſe. Attornies have the privilege to ſue and be ſued only in the courts of Weſtminſter, where they practiſe; and they ſhall not be choſen into offices againſt their will.

ATTORNEY *of the Dutchy of Lancaſter*, the ſecond officer in that court.

ATTORNEY-GENERAL, a great officer under the king, created by letters patent, whoſe office is to exhibit informations, and proſecute for the crown in criminal cauſes; and to file the bills in the exchequer, for any thing concerning the king in inheritance or profits. To him come warrants for making of grants, pardons, &c. his ſalary from the crown is 1000l. per ann.

ATTRACTION, in natural philoſophy, an indefinite term applicable to all actions whereby bodies tend towards one another, whether by virtue of their weight, electricity, magnetiſm, impulſe, or any other latent power. Philoſophers generally reckon four different ſorts of attraction, viz. that of coheſion, of electricity, of magnetiſm, and gravitation.

ATTRACTION *of Coheſion*, is peculiar to the component particles of bodies, by virtue of which they are firmly connected and held together. The laws and properties of this attraction are the following: 1. It is very diſcernible and moſt powerful in corpuſcles, or the ſmalleſt particles of matter. 2. It is mutually exerted between thoſe particles; or they mutually attract and are attracted by each other. 3. The ſphere of attraction, or extent of this power, is greater in ſome particles of matter than in others, but very ſmall at the outermoſt; for, 4. this power is inſenſible in ſolid bodies in the leaſt ſenſible diſtance, acting as it were only in contact; and, therefore, 5. it muſt be nearly proportional to the quantity of contiguous ſurfaces; or the parts of the body cohere moſt ſtrongly, whoſe touching ſurfaces are largeſt. 6. This power muſt decreaſe, as the ſquares of the diſtances increaſe; becauſe it muſt be ſuppoſed to iſſue from each particle in right lined directions. 7. Where the ſphere of attraction ends, there a repelling power begins; by which the particles, inſtead of attracting, repel and fly from each other, 8. By this power the ſmall portions or drops of a fluid, conform themſelves to a ſpherical figure.

The firſt and ſecond of theſe properties are evident from various experiments; as the ſudden union of two contiguous drops of mercury, water, &c. Thus the drops, plate VII.* *fig.* 5. will, as ſoon as they touch each other, run together, and form one large drop. The ſtrong adheſion of two leaden balls, which touch by poliſhed ſurfaces; as alſo of glaſs panes, and in capillary tubes; the riſing of water by the ſides of a glaſs veſſel, and into tubes of ſand, aſhes, ſugar, ſponge, and all porous ſubſtances.

The third property is proved by the ſticking or adhering of water to ſubſtances, which by mercury are left dry. The fourth and fifth properties are evinced by the hyperbolic curve, formed by the ſuperficies of a fluid aſcending between glaſs-planes touching each other on one ſide. The ſixth property is evident. The ſeventh appears from the aſcent of a ſteam, or vapour, from humid or fluid bodies; and the eighth property is manifeſt by drops of water falling on duſt.

From this account of the attraction of coheſion, we have a rational ſolution of ſeveral very curious and ſurpriſing phænomena; as why the parts of bodies adhere and ſtick ſo firmly together; why ſome are hard, others ſoft: ſome fixed, others fluid; ſome elaſtic, others void of elaſticity: all which ariſe from the different figures of the particles, and the greater or leſſer degree of attraction conſequent thereupon. On this principle, we account for the manner how plants imbibe the nutritive juices by the fibres of the roots; alſo for the riſe of the ſap in vegetables, and for the whole œconomy of vegetation. Hence the rationale of the various ſecretions of fluids by the glands, and their wonderful circulation through the fine capillary veſſels. Hence alſo the reaſon of ſoldering and gilding metals; alſo of melting, or fuſion by heat. Hence alſo the exhalation of vapours by the heat of the ſun or fire; the aggregation of aqueous particles in the air, forming the drops of rain. We hence ſee the reaſon of diſtillation, filtration, diſſolution, digeſtion, ſublimation, precipitation, cryſtallization, and the other operations of chemiſtry and pharmacy. Laſtly, it is by this power of attraction and repulſion, that we are to account for thoſe wonderful phænomena of ſubterranean aſcenſions and exploſions; of volcanos and earthquakes; of hot ſprings, damps, and ſuffocating exhalations in mines, &c. See COHESION.

The ſecond ſpecies of attraction is that of electrical bodies, as glaſs, amber, ſealing-wax, jet, &c. for the properties of which, ſee ELECTRICITY.

For the properties of the third kind of attraction, ſee MAGNET and MAGNETISM.

The fourth kind of attraction, viz. that of gravitation.

All philoſophers agree that there is a certain force by which the primary planets tend towards the ſun and the ſecondary planets towards their primary.

This Sir Iſaac Newton calls attraction, which may be reckon'd a primordial quality of matter; nor is it perhaps poſſible to explain the celeſtial bodies on the principle of impulſion. Sir Iſaac ſeems to waver in ſome parts of his works concerning the nature of attraction, and admits of an impelling power; there is reaſon to think it was a kind of tribute he choſe to pay to the prejudice, or rather the general opinion of the age he lived in, than his real ſentiment; becauſe he permitted Mr. Cotes, his diſciple, to adopt attraction without reſerve, as may be ſeen in the preface to his ſecond edition of his Principia; and this preface was written under the eye of Sir Iſaac, and had his approbation. Beſides, Sir Iſaac admits a reciprocal attraction among the celeſtial bodies, and this very opinion ſeems to ſuppoſe attraction a quality inherent in bodies; but be that as it may, according to Newton, the attractive force decreaſes in an inverſe ratio to the ſquares of the diſtances: this learned philoſopher has ſolved a great part of the celeſtial phænomena on this ſingle principle, and all who have tried to account for them ſince, on the ſame principle, have ſucceeded to a ſurprizing degree of exactneſs. The motion of the moon's apogee, which was pretended to be irreconcileable to this hypotheſis, is now found to be entirely conformable to it, and does honour to the Newtonian ſyſtem. All the other inequalities of the motion of the moon, which are very conſiderable, may alſo eaſily be accounted for by the ſyſtem of attraction, and demonſtrated by calculation.

All the phænomena hitherto obſerved, demonſtrate a mutual tendency of the planets towards each other; wherefore, we muſt admit this for a truth on its own evidence: and, though we ſhould be forced to acknowledge this a primordial and inherent quality in matter, we may venture to ſay, that the difficulty of conceiving ſuch a cauſe would be a very weak argument againſt its exiſtence. No one doubts but that a body which meets another, communicates motion to it; but have we an idea of the power by which this communication is made? The vulgar eye here, perhaps, penetrates as far as that of the philoſopher. No body is ſurprized at ſeeing a ſtone fall; they have always ſeen it; philoſophers, well acquainted with the effects of impulſion, have never troubled themſelves about the cauſe which produces them. Now, if every body which meets another ſhould ſtop without communicating motion to it, a philoſopher would be as much aſtoniſhed at this phænomenon, as a common man at ſeeing a heavy body ſuſpended in the air. If we underſtood wherein the impenetrability of matter conſiſts, we ſhould not perhaps be clearer about the nature of the impelling power. We only ſee that, in conſequence of this impenetrability, the ſhock of one body againſt another muſt be followed by ſome change, either in both or one of the bodies; but we know not, and perhaps never ſhall, by what power this change is effected; and why, for inſtance, a body which ſtrikes againſt another ſhould not always continue at reſt after the ſhock, without communicating a part of its motion to the body which reſiſts it. It is apprehended attraction contradicts the notion we have of matter; but, if we enquire attentively, we ſhall find theſe ideas no ways repugnant. The univerſe is concealed from us by a curtain, we ſee only ſome part of it; were that drawn up on a ſudden, we ſhould be ſurprized to ſee what paſſes behind it: beſides, the pretended inconſiſtence of attraction, with the nature of matter, is ſolved by admitting an intelligent being, who could as eaſily ordain bodies to act on each other at a diſtance as in contact.

ATTRACTIVE, having the power or property of attraction.

ATTRIBUTE, in a general ſenſe, a quality belonging to ſome perſon or thing. Thus, underſtanding is an attribute of the mind, and extenſion an attribute of body.

ATTRIBUTES, in theology, the ſeveral qualities or perfections of the divine nature, which conſtitute his eſſence.

ATTRIBUTES, in logic, the predicates of any ſubject, or what may be affirmed or denied of any thing.

ATTRIBUTES, in painting and ſculpture, the ſymbols added to ſeveral figures to intimate their particular office and character. Thus the eagle is the attribute of Jupiter; a caduce of Mercury; a club of Hercules; a balance of Juſtice: &c.

ATTRITION, in a general ſenſe, the rubbing or ſtriking of bodies one againſt another, ſo as to throw off ſome of their ſuperficial particles.

The grinding or poliſhing of bodies is performed by attrition, the effects of which are heat, light, fire, and electricity.

ATTRITION is often uſed for the friction of ſuch ſimple bodies as do not wear from rubbing againſt one another; but whoſe fluids are, by that motion, ſubjected to ſome particular determination; as the various ſenſations of hunger, pain, and pleaſure, are ſaid to be occaſioned by the attrition of the organs formed for ſuch impreſſions.

* ATYS, in fabulous hiſtory, a youth eſteemed by Cybele, the mother of the Gods, who made him her prieſt, on condition that he ſhould preſerve his chaſtity; but he breaking his vow by lying with the nymph Sangaritis, the goddeſs puniſhed him, by throwing him into a phrenzy, in which he caſtrated himſelf, when Cybele being filled with compaſſion, turned him into a pine tree.

AUCTION, *Auctio*, a public ſale, very much in uſe for eſtates, houſhold goods, &c. By this method of ſale, the higheſt bidder is always the buyer.

* They have a very different method of ſelling by auction in Flanders; it is the *firſt* bidder that is there the purchaſor. The auctioneer puts up the article at what he thinks the full value, and gradually lowers the ſum till ſome perſon bids, and the firſt bidder is always the buyer. We cannot but approve of this method of ſelling by auction, for when the article comes down to a moderate price, a perſon who is willing to become a purchaſer, is ſure to bid, leſt another ſhould ſpeak before him; and there is no bidding a ſecond time as in our ſales by auction.

AUDIENCE, in a general ſenſe; ſee HEARING.

AUDIENCE given to ambaſſadors, the ceremonies obſerved in courts, at the admiſſion of ambaſſadors, or public miniſter. In England, audience is given to ambaſſadors in the preſence-chamber; to envoys and reſidents, in a gallery, cloſet, or in any place where the king happens to be. Upon being admitted, as is the cuſtom of all courts, they make three bows, after which they cover and ſit down; but not till after the king is covered and ſat down, and given them the ſign to put on their hats. When the king does not chuſe to have them covered, and ſit, he himſelf ſtands uncovered; which is taken as a ſlight.

AUDIENCE, the name of an eccleſiaſtical court held by the archbiſhop of Canterbury, wherein differences upon elections, conſecrations, inſtitutions, marriages, &c. are heard.

AUDIENDO & TERMINANDO, a writ, or more properly a commiſſion, directed to certain perſons, when any riotous aſſembly, inſurrection, &c. is committed in any place, for appeaſing it, and puniſhing the offenders.

AUDIT, a regular hearing and examination of an account by ſome proper officers appointed for that purpoſe.

AUDITA QUERELA, a writ that lies uſually where one is bound in a ſtatute ſtaple, or recognizance, when a perſon has any thing to plead, but hath not a day in a court for pleading it; or where a judgement is given for debt, and the defendant's body in execution; then if he have a releaſe, or other ſufficient cauſe to be diſcharged therefrom, but wants a day in court to plead the ſame, this writ may be granted him againſt the perſon that has recovered, or againſt his executors. This writ is granted by the lord chancellor, upon view of the exception ſuggeſted to the judges of either bench, willing them to grant ſummons to the ſheriffs of the county where the creditor is, for his appearance, at a certain day before them.

AUDITOR, in a general ſenſe, a hearer, or one who liſtens and attends to any thing.

AUDITOR is alſo uſed for ſeveral officers appointed to audit. See Audit.

AUDITOR, an officer of the king, or ſome other great perſon, who, by examining yearly the accounts of the under officers, makes up a general book, with the difference between their receipts and charges, and their allowances or allocations.

AUDITOR *of the Receipts*, an officer of the exchequer who files the tellers bills, makes an entry of them, and gives the lord-treaſurer a certificate of the money received the week before.

AUDITORS *of the Revenue*, or *of the Exchequer*, officers who take the accounts of thoſe who collect the revenues and taxes raiſed by parliament, and take the accounts of the ſheriffs, eſcheators, collectors, tenants, and cuſtomers, and ſet them down in a book and perfect them.

AUDITORS *of the preſt and impreſt*, are officers of the exchequer, who take and make up the account of Ireland, Berwick, the Mint, and of any money impreſſed to any man for the king's ſervice.

AUDITORY, ſomething relating to the ſenſe of hearing. See the article Hearing.

AUDITORY, or AUDIENCE, an aſſembly of people who attend to hear a perſon ſpeak in public.

AUDITORY *Nerves*, in anantomy, a pair of nerves ariſing from the medulla oblongata, with two trunks, the one of which is called the portio dura, or hard portion, the other portio mollis, or ſoft portion. See Nerve.

AVE-MARIA, the angel Gabriel's ſalutation of the Virgin Mary, when he brought her the tidings of the incarnation. It is become a prayer, or form of devotion, in the Romiſh church. Their chaplets and roſaries are divided into ſo many ave-maries, and ſo many paternoſters, to which the papiſts aſcribe a wonderful efficacy.

AVENA, the Oat, in botany; ſee Oat.

AVENOR, an officer belonging to the king's ſtables, who provides oats for the horſes. He acts by warrant from the maſter of the horſe.

AVENUE, in gardening, a walk planted on each ſide with trees, leading to an houſe or wood, &c. To form an avenue the Engliſh elm will do in all grounds, except ſuch as are very wet and ſhallow; and this is preferred to all other trees, becauſe it will bear cutting, heading or lopping in any manner, better than moſt others. The rough or ſmooth Dutch elm is approved by ſome, becauſe of its quick growth: this is a tree that will bear removing very well; it is alſo green almoſt as ſoon as any plant whatever in ſpring, and continues ſo as long as any; and it makes an incomparable hedge, and is preferable to all other trees for lofty eſpaliers. The lime is valuable for its regular growth, and fine ſhade. The horſe cheſnut is proper for all places that are not much expoſed to rough winds. The common cheſnut will do very well in a good ſoil, and riſes to a conſiderable height, when planted ſomewhat cloſe, though, when it ſtands ſingle, it is rather inclined to ſpread than grow tall. Laſtly, the abele is fit for any ſoil, and is the quickeſt grower of any foreſt tree. It ſeldom fails in tranſplanting, and ſucceeds very well in wet ſoils, in which the others are apt to fail. The oak is but little uſed for avenues, becauſe of its ſlow growth.

In avenues of a conſiderable length, and breath, the modern way is to plant clumps, conſiſting each of ſeven or nine trees.

AVENUE, in fortification, an opening or inlet into a fort, baſtion, or the like. See Bastion.

AVERAGE, in commerce, the accidents and misfortunes which happen to ſhips and their cargoes, from the time of their loading and ſailing, to their return and unloading; and it is divided into three kinds. 1. The ſimple or particular average, which conſiſts in the extraordinary expences incurred for the ſhip alone, or for the merchandizes alone. Such is the loſs of anchors, maſts, and rigging, occaſioned by the common accidents at ſea; the damages which happen to merchadize by ſtorm, prize, ſhipwreck, wet or rotting; all which muſt be borne and paid by the thing which ſuffered the damage. 2. The large and common average, being thoſe expences incurred, and damages ſuſtained for the common good and ſecurity both of the merchandizes and veſſels, conſequently to be borne by the ſhip and cargo, and to be regulated upon the whole. Of this number are the goods or money given for the ranſom of the ſhip and cargo, things thrown over-board for the ſafety of the ſhip, the expences of unlading for entering into a river or harbour, and the proviſions and hire of the ſailors, when the ſhip is put under an embargo. 3 The ſmall averages, which are the expences for towing and pilotting the ſhip out, or into harbours, creeks, or rivers, one third of which muſt be charged to the ſhip, and two thirds to the cargo.

AVERAGE is more particularly uſed for a certain contribution, that merchants make proportionably towards their loſſes. It alſo ſignifies a ſmall duty which thoſe merchants, who ſend goods in another man's ſhip, pay to the maſter for his care of them over and above the freight. Hence it is expreſſed in the bills of lading, paying ſo much freight for the ſaid Goods, with primage and average, accuſtomed.

AVERDUPOIS, or AVERDUPOISE *Weight*, a weight much uſed in England, whoſe pound conſiſts of ſixteen ounces. See WEIGHT.

AVERIA, a general name for cattle; but in law, is confined to oxen, and horſes of the plough.

AVER-LAND, that plowed for the uſe of their lord.

AVERMENT, an offer of the defendant to make good an exemption pleaded in abatement, or bar of the plantiff's action.

General AVERMENT, the concluſion of every plea to the writ, or in bar of replications, or other pleadings, containing affirmative matter.

Particular AVERMENT is when the life of a tenant for life, or a tenant in tail, is averted.

AVERRHOA, in botany, a genus of plants.

AVERRUNCI, in mythology, an order of deities, whoſe peculiar office it was to avert misfortunes. Apollo and Hercules were of this order among the Greeks, and Caſtor and Pollux among the Latins.

* AUGEA, in fabulous hiſtory, the daughter of Alæus, who was deflowered by Hercules, became pregnant, and brought forth Telephus; but when ſhe was delivered, Alæus put both Augea and her ſon into a cheſt, and ordered them to be thrown into the river Caycus, when Venus ſteering the cheſt, brought it to the mouth of the river, where it was taken up by Teuthras, who falling in love with Augea, married her, and afterwards left his kingdom to Telephus.

* AUGEAS, in fabulous hiſtory, king of Elis, particularly famed for his ſtable, which contained three thouſand oxen, and had not been cleaned for thirty years. Hercules was deſired to clear this ſtable in one day; and Augeas promiſed, if he performed it, to give him a tenth part of the cattle. This taſk Hercules performed by turning the courſe of the river Alpheus through the ſtable; when Augeas refuſing to abide by his engagement, Hercules ſlew him with his arrows, and gave his kingdom to Phyleus his ſon, who abhorred his father's inſincerity.

AUGMENT, *Augmentum*, in grammar, an accident of certain tenſes of Greek verbs, being either the prefixing a ſyllable, or the encreaſe of the quantity of the initial vowels.

AUGMENTATION, in a general ſenſe, the act of adding or joining ſomething to another, to increaſe its magnitude.

Court of AUGMENTATION, a court erected in the 27th year of Henry VIII. to take care that the revenues of the crown were properly augmented by the eſtates ariſing from the ſuppreſſion of religious houſes. This court was diſſolved in the firſt year of the reign of queen Mary.

AUGMENTATION, in heraldry, additional charges to a coat armour, frequently given as particular marks of honour, and generally borne either on the eſcutcheon or a conton. Thus all the baronets of England bear the arms of Ulſter in Ireland.

AUGRE, or AWGRE, an inſtrument uſed by carpenters, millwrights, &c. for boring large round holes. It conſiſts of a wooden handle and an iron blade, terminated with a ſteel bit.

AUGURS, among the old Greeks and Romans, were officers appointed to foretel future events by the chattering and feeding of birds, &c.

AUGURY, in its proper ſenſe, the art of foretelling future events by the chattering, ſinging, and feeding of birds; but in its more general ſignification, compriſing all the different kinds of divination, which was a very ancient ſuperſtition; for we find it forbidden by Moſes. It was in great eſteem among the Chaldæans, from whom the Greeks learned it; and from them the Tuſcans had ſo high a value for this art, that, by a decree of the ſenate, it was ordered, that the advice of the augurs ſhould be held ſacred, and never deviated from. But what opinion the wiſer Romans had of the art, appears from the ſaying of Cato, recorded by Cicero, that he wondered how two augurs could meet, without laughing in each other's face.

The principal kind of augury, and from which it has its name, was the obſervation of birds; to which the ancients were ſo ſuperſtitiouſly addicted, that they never would undertake any thing of the leaſt importance, without conſulting theſe feathered oracles.

AUGUST, the eighth month of the year, according to our method of computing, beginning with January: but it was the ſixth with the Romans, who for that reaſon called it Sextilis; which name was changed to Auguſt, from Auguſtus Cæſar.

AUGUSTALIA, a feſtival inſtituted by the Romans, in honour of Auguſtus Cæſar, on his return to Rome, after having ſettled peace in Sicily, Greece, Syria, Aſia, and Parthia; on which occaſion they likewiſe built an altar to him, inſcribed *Fortunæ reduci.*

AUGUSTAN, in a general ſenſe, ſomething relating to the emperor Auguſtus. Thus, we ſay, Auguſtan age, Auguſtan æra, &c.

AUGUSTINE MONKS, a religious order in the church of Rome, who followed the pretened rule of St. Auguſtin, preſcribed them by pope Alexander IV. in the year 1256. At preſent the order is divided into ſevetal branches; as the hermits of St. Paul; the Ieronymitans; the monks of St. Bridget; and the bare-footed Auguſtins, inſtituted by a Portugueſe, in 1574, and confirmed by pope Clement VIII. in 1600. As to the rule of St. Auguſtin, which they pretend to follow, is briefly this; The monks are to have all things in common: the rich, who enter into the order, are to ſell their poſſeſſions, and give them to the poor: nothing is to be received, without leave of the ſuperior; they are to employ the firſt part of the morning in labouring with their hands, and the reſt in reading: they have Saturday allowed them to provide themſelves with neceſſaries, and are permitted to drink wine on Sundays. When they go abroad, they muſt always go two in a company: they are never to eat but in their monaſtry; they are forbidden to harbour the leaſt thought of women: they are to receive no letters or preſents in ſecret. Theſe with ſeveral other precepts relating to charity, modeſty, chaſtity, and other Chriſtian virtues, conſtitute what they call the rule of St. Auguſtin, which is read in preſence of the monks once every week. The Auguſtins are cloathed in black. At Paris they are known under the name of the religious of St. Genevieve, that abbey being the chief of the order. There are nuns likewiſe of this order.

AVIARY, a place for feeding and propagating birds. It ſhould be ſo large, as to give the birds ſome freedom of flight; and turfed, to avoid the appearance of foulneſs on the floor.

AVIS, the name of an order of knighthood in Portugal, inſtituted by Sancho the firſt king, in imitation of the order of Alcantara, whoſe green croſs they wear.

AULIC, an epithet given to certain officers of the empire, who compoſe a court, which decides, without appeal, in all proceſſes entered in it. Thus we ſay, aulic council, aulic chamber, aulic counſellor. The aulic council is compoſed of a preſident, who is a catholic; of a vice-chancellor, preſented by the archbiſhop of Mentz; and of eighteen counſellors, nine of whom are proteſtants, and nine catholics. They are divided into a bench of lawyers, and always follow the emperor's court, for which reaſon they are called *juſtitium imperatoris*, the emperor's juſtice, and aulic council.

AUME, a Dutch meaſure for Rheniſh wine, containing forty Engliſh gallons.

AUNCEL-WEIGHT, an ancient kind of ballance, now out of uſe. In many parts of England, auncel-weight ſignifies meat ſold by the hand, without ſcales.

AUNE, a long-meaſure uſed in France to meaſure cloth, ſtuffs, ribbons, &c.

At Rouen it is equal to one Engliſh ell, at Calais to 1. 52, at Lyons to 1. 016, and at Paris to 0. 95.

AVOIDANCE, in canon law, is when a benefice becomes void of an incumbent, which happens either in fact, as by the death of the parſon, or in law, as by ceſſion, deprivation, reſignation, &c. In the firſt of theſe caſes, the patron muſt take notice of the avoidance, at his peril; but in avoidance by law, the ordinary is obliged to give notice to the patron, in order to prevent a lapſe.

AVOWRY, in law, is when a perſon diſtrained ſues out a replevin; for then the diſtrainer muſt avow, and juſtify his plea, which is called his avowry. See REPLEVIN.

AURA, in chemiſtry, a certain fine pure ſpirit, found in every animal or vegetable body; but ſo ſubtile, as only to be ſuſceptible by its ſmell and taſte, or other effects, not found in any other but that body.

AURANTIUM, in botany, the orange. See ORANGE.

AURELIA, in natural hiſtory, the ſame with chryſalis, and is ſometimes nymph. See CHRYSALIS and NYMPH.

AUREOLA, in its original ſignification, a jewel which is propoſed as a reward of victory in ſome public diſpute. Hence the Roman ſchoolmen applied it to denote the reward beſtowed on martyrs, virgins, and doctors, on account of their works of ſupererogation: and painters uſe it to ſignify the crown of glory, with which they adorn the heads of ſaints, confeſſors, &c.

AURICLE, in anatomy, that part of the ear, which is prominent from the head, called by ſome auris externa. See EAR.

AURICLES *of the Heart*. Theſe are a kind of appendages of the heart at its baſe, and are diſtinguiſhed by the names of the right and left. The right auricle is much larger than the left, and this is placed in the hinder, that in the anterior part.

AURICULAR, whatever belongs or relates to the ear. Thus we ſay, auricular witneſs, auricular confeſſion, &c. as being done ſecretly, and as it were in the ear.

AURIGA, the Waggoner, in aſtronomy, a conſtellation in the northern hemiſphere, conſiſting of twenty-three ſtars, according to Tycho; forty according to Hevelius; and ſixty-eight in the Britannic Catalogue.

AURISCALPIUM, an inſtrument to clean the ears, and ſerving alſo for any other operation in diſorders of that part.

AURORA, the morning twilight, or that faint light which appears in the morning, when the ſun is within eighteen degrees of the horizon.

* AURORA, in heathen mythology, the Goddeſs of the Morning, the youngeſt daughter of Hyperion and Theia, or, as ſome ſay, the daughter of Titan and the Earth. Under this name the ancients deified the light that fore-runs the riſing of the ſun; which, by the poets, has been repreſented in the moſt beautiful manner, particularly by Homer and Virgil, who repreſent Aurora as riſing out of the ocean, in a ſaffron-coloured robe, and ſeated in a flame-coloured chariot, drawn by two or four horſes, with her roſy fingers opening the gates of light, and ſcattering the perly dew. This goddeſs is ſaid to have been enamoured with a beautiful youth named Cephalus, who is ſuppoſed to be the ſame with the Sun, and by whom ſhe had Phæton; her greateſt favourite however was Tithonus, to whom ſhe bore Æmathion and Memnon; ſhe had alſo an amour with Orion, though Aſtreas was her huſband, who was one of the Titans, and by whom ſhe had the ſtars, and the four winds, Zephyrus, Argeſtes, Boreas, and Notus.

AURORA *Borealis*, the northern dawn or light; a remarkable meteor of a luminous appearance, frequently viſible during the night in the northern parts of the heavens.

This meteor exhibits a great variety of phænomena. The moſt obvious ſolution of the aurora borealis, or at leaſt what would appear ſo to thoſe who have only attended to the circumſtances of ſome particular meteors of this kind, is, that it is a thin nitro-ſulphureous vapour, raiſed in our atmoſphere, conſiderably higher than the clouds; that this vapour, by fermentation takes fire, and the exploſions of one portion of it kindling the next, the flaſhes ſucceed one another till the whole quantity of vapour within their reach is ſet on fire. Some have thought that vapours rarefied exceedingly by ſubterraneous fire, and tinged with ſulpherous ſteams, might thence be diſpoſed to ſhine in the night, and riſing up to the top of the atmoſphere, or even beyond its limits, might produce theſe undulations in the air, which conſtitute this phænomenon. But theſe hypotheſes have been rejected, as inſufficient.

AURUM *Fulminans*, a chemical compoſition prepared by diſſolving gold in aqua regia, and precipitating the metal from the menſtruum, by adding a volatile alkali: after which the precipitated powder is edulcorated by frequent effuſions of warm water, and then dried in the ſhade.

The aurum fulminans, prepared in this manner, weighs about one fourth part more than the gold employed, three parts of gold yielding four of the fulminating powder; according to the Lemery, Kunckel, and other practical writers. Part of the increaſe proceeds from the volatile alkali; for, on adding to the aurum fulminans a little vitriolic acid, the volatile ſalt riſes in ſublimation, ſatiated with the acid: the remaining powder is found to be diveſted of its fulminating power. From the coalition of the volatile alkali with the nitrous acid in the menſtruum reſults an ammoniacal nitre, a ſalt which of itſelf detonates on being heated; but by what power or mechaniſm its detonating quality is ſo remarkably increaſed in the aurum fulminans, is unknown.

The exploſion of aurum fulminans is more vehement than of any other known kind of matter: it goes off in a leſs degree of heat than any of the other exploſive compoſitions; and even grinding it ſomewhat ſmartly in a mortar, is ſufficient for making it explode. Some inſtances are mentioned in the Breſlau collections, and the Ephemerides Naturæ Curioſorum, of a very ſmall quantity burſting in pieces the marble mortar in which it was rubbed; and an accident of the ſame kind happened ſome years ago to a ſkilful chemiſt here. The operator therefore cannot be too much upon his guard in the management of ſo dangerous a preparation.

It has been reckoned, that a few grains of aurum fulminans act with as much force as ſeveral ounces of gun-powder: but the actions of the two are of ſo different kinds, that it is difficult to determine in what manner their ſtrength can be compared. The report of aurum fulminans is of extreme acuteneſs, offending the ear far more than that of a much larger quantity of gun-powder; but does not extend to ſo great a diſtance, ſeeming to differ from it as the ſound of a ſhort or tenſe muſical ſtring, from that of a long one, or of one which is leſs ſtretched. In ſome experiments made before the Royal Society, and mentioned in the firſt volume of Dr. Birch's Hiſtory, aurum fulminans cloſed up in a ſtrong hollow iron ball, and heated in the fire, did not appear to explode at all; while gun-powder, treated in the ſame manner, burſt the ball. On the other hand, a little aurum fulminans, exploded on a metalline plate in the open air, makes an impreſſion or perforation in the plate: an effect which gun-powder could ſcarcely produce in any quantity. *Lewis's Commercium Philoſophico Technicum*

AURUM *Muſivum*, or *Moſaicum*, a chemical preparation uſed by japanners in gilding their veſſels.

Take of tin one pound, of flowers of ſulphur ſeven ounces, of ſal ammoniacum and purified quickſilver, each half a pound. Melt the tin, and add the quickſilver to it in that ſtate; and when the mixture is become cold, powder it, and grind it with the ſal ammoniacum and ſulphur, till the whole be thoroughly commixt. Calcine them in a mattraſs; and the other ingredients ſubliming, the tin will be converted into the aurum moſaicum; and will be found in the bottom of the glaſs like a maſs of bright flaky gold powder: but if any black or diſcoloured parts appear in it, they muſt be carefully picked or cut out.

The ſal ammoniacum employed, ought to be perfectly white and clean; and care ſhould be taken, that the quickſilver be not ſuch as is unadulterate with lead, which may be known by putting a ſmall quantity in a crucible, into the fire, and obſerving when it is taken out, whether it be wholly ſublimed away, or have left any lead behind it. The calcination may be beſt performed in a coated glaſs body, hung in the naked fire: and the body ſhould be of a long figure, that the other ingredients may riſe ſo as to leave the coloured tin clear of them. The quickſilver, though it be formed into cinnabar along with the ſulphur, need not be waſted; but may be revived by diſtilling it with the addition of quick-lime.

AURUM *Potabile*, or tincture of gold, a medicine formerly of great requeſt, but at preſent rarely if ever uſed.

AUSTERE, rough, aſtringent. An auſtere taſte is ſuch a one as conſtringes the mouth and tongue with ſome auſterity; as the taſte of unripe fruit. Things of an auſtere taſte are ſuppoſed by ſome, from their glutinous quality, to generate the ſtone.

AUSTERITY, among moral writers, ſeverity and rigour. Thus we ſay, auſterity of manners.

* AUSTRIA, the moſt eaſterly part of Germany, and has Hungary on the eaſt, Moravia and Bohemia on the north; Bavaria and the archbiſhopric of Saltſbourg on the weſt, and Siria on the ſouth. It has the Danube throughout its whole length: it has likewiſe the Traun, the Ens, the Leyta, and other rivers, that facilitate commerce, and render the land fruitful; which bring forth plenty of corn, ſaffron, fruits, and wine. Auſtria is divided into two parts, the Higher and Lower. Higher Auſtria is the weſtern part, containing four ſmall quarters. There are two on the ſouth of the Danube. That of Hauſs, which extends along the ſide of the Danube; and in which are the cities of Lintz and Ens: and that of Traun, where we find the towns of Steor and Gemund. The other two Quarters are to the north of the Danube; that of Muhl contains the town of Freiſtadt, and borders upon Bavaria; that

of Schwartz is towards Lower Auſtria, and has the cities Mathauſen and Greyn. Lower Auſtria is the eaſtern part, and is twice as large as the former; though it is divided only into four quarters; High Manhartſberg, and the Lower, both on the north of the Danube; High Wienner-Wald and the Lower; theſe are both to the ſouth of that river. The towns are Stain and Krembs; Retz, St. Polten, Tuln, and Trauſmar; Haimburg, Neuſtat, Newburg, Bruck, and Vienna, which is the capital.

* AUSTRIA (Circle of) is one of the nine great provinces which compoſe the German empire. It is the moſt eaſtern and ſouthern of all the reſt, is bounded on the north by the kingdom of Bohemia, the circle of Bavaria, and a ſmall part of that of Swabia; on the weſt by the Swiſs and Griſons; on the ſouth by the State of Venice, and on the eaſt by Hungary. It is divided into Interior Auſtria, which comprehends the Auſtrian archduchy, and the duchies of Carinthia, Styria, and Carniola, and their dependencies; Exterior Auſtria, which is the Tirol, taken in its whole extent: ſome add to this circle all that the Houſe of Auſtria poſſeſſes in Swabia. All that that houſe poſſeſſes in the empire by right of ſucceſſion is called the Hereditary Countries of the Houſe of Auſtria. Hungary and Bohemia are not in the empire, and are kingdoms that pretend to be elective, though that claim is not allowed.

AUTER DROIT, in law, is when perſons ſue, or are ſued in another's right, as executors, guardians, &c.

AUTER FOIS ACQUIT, in law, a plea made by a criminal that he has been acquitted of the ſame crime, with which he is charged. There are likewiſe pleas of auter fois convict and attaint, that he has been before convicted of the ſame felony.

AUTHENTIC, ſomething of acknowledged authority. In law, it implies ſomething cloathed in all its formalities, and atteſted by perſons to whom credit has been regularly given. Thus we ſay, authentic papers, authentic inſtruments.

AUTHOR, one who created or produced any thing. Thus God is called the author of nature, the author of the univerſe.

The word author is ſometimes uſed in the ſame ſenſe as inventor. As, Otho de Guerick is reported to be the author of the air-pump.

AUTHOR, in matters of literature, one who has compoſed ſome book or writing.

Authors may be diſtinguiſhed into ſacred and profane, ancient and modern, known and anonymous, Greek, Latin, Engliſh, French, &c. and with regard to the ſubjects they treat, into divines, philoſophers, orators, hiſtorians, poets, grammarians, phyſiologiſts, &c.

An original author is he who does not follow any other perſon, or imitate any model, either in the matter or method of his compoſition.

AUTHORITY, in a general ſenſe, a right to command, and make one's ſelf obeyed. In which ſenſe, we ſay, the royal authority, the epiſcopal authority, the authority of a father, &c.

Authority, the teſtimony of an author, ſome apophthegm, or ſentence of an eminent perſon, quoted in a diſcourſe by way of proof.

AUTHORITY, in law, a power given by word, or writing, to a ſecond perſon to act ſomething, and may be by writ, warrant, commiſſion, letter of attorney, &c.

AUTHORITY is repreſented, in painting, like a grave matron ſitting in a chair of ſtate, richly cloathed in a garment embroidered with gold, holding in her right hand a ſword, and in her left a ſceptre. By her ſide is a double trophy of books and arms.

AUTO DA FE, act of faith. The ceremony of putting in execution the ſentences pronounced on criminals by the tribunal of the inquiſition. It is ſo called, becauſe it is conſidered, in thoſe countries as the moſt illuſtrious and public proof that can be given of a zeal for religion and the Catholic faith. See INQUISITION.

AUTOMATUM, or AUTOMATON, an inſtrument or machine; which, by means of ſprings, weights, &c. ſeems to move itſelf, as a watch, clock, &c. Such alſo were Archytus's flying dove, Regiomontanus's wooden eagle, &c.

* AUTONOE, in fabulous hiſtory, the daughter of Cadmus, king of Thebes, and Hermione, married Ariſteus, and was the mother of Acteon.

AUTUMN, the third ſeaſon of the year, when the harveſt and fruits are gathered in. Autumn is repreſented, in painting, by a man at perfect age, cloathed like the vernal, and likewiſe girded with a ſtary girdle; holding in one hand a pair of ſcales equally poized, with a globe in each; in the other, a bunch of divers fruits and grapes. His age denotes the perfection of this ſeaſon, and the balance, that ſign of the zodiac, which the ſun enters when our autumn begins.

AUTUMNAL, relating to autumn.

AUTUMNAL *Point*, that point of the equinox from which the ſun begins to deſcend towards the ſouth pole.

AUTUMNAL *Signs*, in aſtronomy, the ſigns Libra, Scorpio, and Sagittarius, through which the ſun paſſes during the autumn.

AUTUMNAL *Equinox*, the time when the ſun enters the autumnal point. See EQUINOX.

AUXILIARY, *Auxiliaris*, aiding or helping to another.

AUXILIARY *Verbs*, in grammar, ſuch as help to form or conjugate others; that is, are prefixed to them, to form or denote the moods or tenſes thereof, As *to have* and *to be*, in the Engliſh; *etre & avoir*, in the French, &c.

In the Engliſh language, the auxiliary verb *am*, ſupplies the want of paſſive verbs.

AUXILIUM *Curiæ*, in law, a precept or order of court, to cite or convene one party at the ſuit of another.

AWARD, in law, the judgment of an arbitrator, or of one who is choſen by the parties themſelves for terminating their difference. See ARBITRATOR.

A-WEIGH, in navigation, the anchor is called a-weigh, or a-trip, when the cable, being drawn perpendicular to it, and continued to be heaved into the ſhip, at length weighs or trips it out of the ground.

AWL, or AUL, among ſhoe-makers, an inſtrument to bore holes through the leather, to facilitate the ſtitching, or ſewing the ſame. The blade of the awl is uſually a little flat and bended, and the point ground to an acute angle.

AWME, or AUME, a Dutch liquid meaſure, equal to the tierce in England.

AWNING, amongſt ſeamen, a canopy of canvaſs extended over the decks in hot weather, to protect them from being ſplit by the heat of the ſun; likewiſe for the convenience of the officers, &c.

AX, among carpenters, an inſtrument wherewith to hew wood.

This implement is deeper and heavier than the joiners hatchet.

AXILLA, in anatomy, the arm-pit, or the cavity under the upper part of the arm.

AXILLARY, *Axillaris*, ſomething belonging to, or lying near the axilla. Thus, axillary glands, arteries, and veins, ſuch as are actuated under the arm-pits.

AXIOM, in philoſophy, a plain, ſelf-evident, and received notion. Such as, that nothing can act where it is not; that a thing cannot be, and not be, at the ſame time; that the whole is greater than a part thereof; and that from nothing, nothing can ariſe. By axioms, called alſo maxims, are underſtood all common notions of the mind, whoſe evidence is ſo clear and forcible, that a man cannot deny them, without renouncing common ſenſe and natural reaſon. The rule to know an axiom is this: Whatever propoſition expreſſes the immediate clear compariſon of two ideas without the help of a third, is an axiom. But if the truth does not appear from the immediate compariſon of two ideas, it is no axiom.

AXIOM, an eſtabliſhed principle in ſome art or ſcience. Thus it is an eſtabliſhed axiom in phyſics, that nature does nothing in vain: ſo it is in geometry, that if to equal things you add equals, the ſums will be equal. It is an axiom in optics, that the angle of incidence is equal to the angle of reflection, &c. In which ſenſe too, the general laws of motion are called axioms: whence it may be obſerved, that theſe particular axioms are but deductions from certain hypotheſes.

AXIS, a line, or long piece of iron or wood, paſſing through the center of a ſphere and about which the ſphere revolves.

AXIS *of the World*, an imaginary right-line conceived to paſs through the center of the earth, from one pole to another, about which the ſphere of the world, according to the Ptolemaic ſyſtem, revolves in its diurnal motion.

AXIS, in geometry, that ſtraight line in a plain figure at reſt, about which the figure revolves, in order to form or generate a ſolid.

AXIS *of a Cone*, the ſtraight line or ſide, about which the right-angled triangle forming the cone, moves; and ſo only a right cone can properly have an axis, becauſe an oblique cone cannot be generated by the motion of a plain figure about a ſtraight line at reſt: but becauſe it is plain from the definition, that the axis of a right cone is a ſtraight line, drawn from the center of its baſe to the vertex; therefore, the writers of conic ſections call likewiſe that line drawn from the center of the baſe of an oblique cone to the vertex, the axis of the cone.

AXIS *of a Cylinder*, that quieſcent line about which the parallelogram forming the cylinder revolves. But in both right and oblique cylinders, that right line joining the centers of the oppoſite baſes, is called the axis of the cylinder.

AXIS *of a Glaſs*, in optics, a right line, connecting the middle points of the two oppoſite ſurfaces of the glaſs.

AXIS, in optics, that ray which is perpendicularly on the ſurface of the eye, and conſequently paſſes through its center.

AXIS *of Oſcillation*, a right line parallel to the horizon, paſſing through the center about which a pendulum vibrates.

AXIS *of a Planet*, a line drawn through the center of the planet, and about which it revolves.

AXIS *of a Magnet*, a right line drawn through the magnet longitudinally, and terminated by its two poles.

AXIS, in anatomy, the tooth-like eminence in the ſecond vertebra of the neck.

Spiral AXIS, in architecture, the axis of a twiſted column drawn in a ſpiral form, in order to trace the circumvolutions on the ſurface.

AXIS *of the Ionic Capital*, a line paſſing perpendicularly through the middle of the eye of the volute.

AXIS *in peritrochio*, one of the five mechanical powers uſed to raiſe weights to a conſiderable height. It conſiſts of a peritrochium, or wheel, concentric with the baſe of a cylinder, and moveable together with it about its axis.

Becauſe, in this machine, the wheel and its axis move together, it is evident that, in one turn of the wheel, when the power P (ſee plate VII. *fig.* 6.) deſcends a length equal to the circumference of the wheel, the weight W will be raiſed an height equal to the circumference A, by the winding of the rope, which carries the weight upon the ſaid axis. And becauſe, when there is an equilibrium between two weights, as W and P, there muſt be a reciprocal proportion between the maſſes and velocities; W will be to P, as the circumference of the wheel is to that of the axis (ſuppoſing the thickneſs of the rope to be inconſiderable), or as the ſemi-diameters of the wheel to the ſemi-diameter of the axis; for the ſemi-diameters of different circles are in the ſame proportion to one another as their circumferences. The axis in peritrochio may alſo be conſidered as a lever of the firſt kind: for the fulcrum will be in the middle of the axis A. If, therefore, lines be drawn from the middle of the axis to the power and weight, parallel to the horizon, the radius or ſemi-diameter of the wheel will be the diſtance of the power, and the radius of the axis the diſtance of the weight; and when theſe radii are reciprocally as the weight and power, the machine will be in equilibrio. The wheel and axis therefore is nothing more than a perpetual lever. It has been already obſerved that the thickneſs of the rope carrying the weight, is ſuppoſed to be inconſiderable; but as this is never the caſe in practice, when the weight is conſiderable, it will be neceſſary to make a proper allowance for it; and this is done by adding the ſemi-diameter of the rope to the ſemi-diameter of the axis; for the weight really hangs half the thickneſs of the rope beyond the axis. It is alſo neceſſary that the line of direction in which the power acts be a tangent to the wheel; for otherwiſe it will not produce the ſame effect, as the lever to which it is applied will be ſhortened. If a plumb-line be applied to any part of the circumference of the wheel above the horizontal radius, it will form a chord line, connecting two points in the circumference of the wheel; and if this chord be biſected by a radius drawn from the center, the part of that radius intercepted between the center and the chord will be the length of the lever on which the power acts in that poſition.

The machine repreſented by the figure, is a model (made by a ſcale of an inch to a foot) of ſuch an axle and wheel, as is often made uſe of to draw water out of a well, by means of a power drawing by a rope applied to the circumference of one of the wheels of the machine, or by preſſing down ſucceſſively the handles E, F, G, H, I, K, whilſt another rope or chain is wound up upon the axis A or B, a bucket hanging at it inſtead of the weight W. Here, in the experiment, one pound hanging at the circumference of the biggeſt wheel C D, will keep in equilibrio 12 pounds hanging at the ſmalleſt axis A, or 6 pounds at the axis B, and only 3 pounds upon the circumference T V. In the ſame manner, when the weight hanging at the axis continues in the ſame place, and to be of the ſame quantity, viz. 12 pounds; then the power, which, at the circumference of the wheel C D, is equal to 1 pound, muſt be equal to $1\frac{1}{2}$ pound, if to be applied at S R; but if it be applied at one of the handles at the diſtance of a $\frac{1}{4}$ of an inch from the circumference of the wheel C D (which is the ſame as if a new wheel was added of $\frac{1}{2}$ an inch more in diameter); then a power, equal to no more than $\frac{12}{14}$ of a pound, will keep the weight in equilibro, and raiſe it, if its intenſity be increaſed ever ſo little.

AXIS, in natural hiſtory, an animal of the deer kind, common in ſeveral parts of Africa.

AXUNGIA, old lard, or the drieſt and hardeſt of any fat in the bodies of animals.

AXUNGIA *Vitri*, ſandiver, or ſalt of glaſs, a kind of ſalt which ſeparates from the glaſs while it is in fuſion.

AYRY, or AERY *of Hawks*, a neſt or company of hawks, ſo called from the old French word *aire*, which ſignified the ſame.

AZALEA, in botany, a genus of plants.

AZIMUTH, in aſtronomy, the angle contained between the meridian and another great circle of the ſphere paſſing through the zenith and nadir; and when this vertical circle paſſes through the center of the ſun or of a ſtar, the meaſure of the angle ſo contained is ſaid to be the azimuth of the ſun or ſtar.

The azimuth is the complement of the eaſtern and weſtern amplitude to a quadrant.

Magnetical AZIMUTH, an arch of the horizon, intercepted between the azimuth or vertical circle, paſſing through the center of any heavenly body and the magnetical meridian. The magnetical azimuth is found by obſerving the object with an azimuth compaſs.

AZIMUTH-COMPASS, an inſtrument for finding either the magnetical azimuth or amplitude of an heavenly object. The learned Dr. Knight invented ſome time ſince a very accurate and uſeful ſea-compaſs, which is at preſent uſed in the navy. See COMPASS. This inſtrument, with the contrivance added by the ingenious Mr. Smeaton, anſwers the purpoſes of an azimuth and amplitude-compaſs.

AZIMUTH *Circles*, called alſo azimuths, or vertical circles, are great circles of the ſphere interſecting each other in the zenith and nadir, and cutting the horizon at right angles. Theſe azimuths are repreſented by the rhumbs on common ſea-charts, and on the globe they are repreſented by the quadrant of altitude, when ſcrewed in the zenith. On theſe azimuths is reckoned the height of the ſtars and of the ſun, when not in the meridian.

AZURE, in a general ſenſe, the blue colour of the ſky.

AZURE, among painters, the beautiful blue colour, with a greeniſh caſt, prepared from the lapis lazuli, generally called ultramarine. With greater propriety, however, azure ſignifies that bright blue colour prepared from the lapis armenus, a different ſtone from the lapis lazuli, though frequently confounded together. This colour is, by our painters, commonly called Lambert's blue.

AZURE, in heraldry, the blue colour in the arms of any perſon below the rank of a baron. In the eſcutcheon of a nobleman, it is called ſapphire; and in that of a ſovereign prince, Jupiter. In engraving, this colour is expreſſed by lines, or ſtrokes drawn horizontally.

AZURIUM, the name of a chemical preparation from two parts of mercury, one of ſulphur, and a fourth of ſal ammoniac, mixed in a mortar, put into a glaſs veſſel, and ſet over the fire till a bluiſh ſmoak ariſes, &c.

AZYGOS, in anatomy, a vein riſing within the thorax on the right ſide, having no fellow on the left; whence it is called azygos, or vena ſine pari.

AZYMITES, azymitæ, in church-hiſtory, Chriſtians who adminiſter the euchariſt with unleavened bread.

This appellation is given to the Latin by the Greek church, becauſe the members of the former uſe fermented bread in the celebration of the euchariſt. They alſo call the Armenians and Maronites by the ſame name, and for the ſame reaſon.

AZYMOUS, ſomething unfermented, or made without leaven; as unleavened bread. Sea-biſket is of this kind.

B.

B, The ſecond letter of the Engliſh and moſt other alphabets.

B. A. ſignifies batchelor of arts, B. L. batchelor of laws, and B. D. batchelor of divinity.

BAAL, an Hebrew and Chaldaic word ſignifying lord, or mighty. It was the name of the idol of the Moabites and Phœnicians. The Grecians, who were accuſtomed to take the eaſtern divinities for their own, called this idol Jupiter, and ſometimes Mars. The Phœnicians adored the ſun under the names of Baal and Moloch. It is thought this idol was the firſt invented by ſuperſtition, and the original worſhip of idolatry.

* BABEL, *Tower of*, began building 2247 before Chriſt, and continued building forty years, when God confounded the builders language, and diſperſed them into different nations. From thence aroſe the difference of languages, the diſperſion of the people, and the forming of empires. From Japhet, Noah's eldeſt ſon, ſprung the inhabitants of the north of Europe and Aſia, as well as thoſe of the weſt. From Shem came the people of the eaſt, as alſo thoſe of Iſrael, and from Ham, deſcended the Canaanites, Philiſtines, Egyptians, and the ancient poſſeſſors of Africa.

BABBLING, among ſportſmen, is ſaid of hounds which are too buſy after they have found a good ſcent.

BABOON, in natural hiſtory, a large kind of ape, common in the Eaſt and Weſt Indies. The face is naked, but the back part of the head is hairy.

BABYLONISH, or BABYLONIAN, belonging or peculiar to Babylon, as Babyloniſh epocha, &c. See EPOCHA.

BACCHANALIA, feaſts celebrated in honour of Bacchus, by the ancient Greeks and Romans. Two of theſe feaſts were particularly remarkable, and diſtinguiſhed by the epithets *greater* and *leſſer*. The latter were held in the open fields during the autumn; but the former in the city about the vernal equinox.

* BACCHUS, in heathen mythology, the god of wine, was the ſon of Jupiter and Semele. To prevent his being deſtroyed by fire, Jupiter took him, half formed, out of his mother's womb, and incloſing him in his thigh, kept him there till the full time of his birth. It is advanced by ſome, that the nymphs took care of his education; and by others that he was educated by the hours; and others, by the Naiades. After this, Mercury carried him to Macris, the daughter of Ariſteus, who anointed his lip with honey; but Juno incenſed at his finding protection in Eubœa, a place ſacred to her, baniſhed him thence; when Macris fled with him into the country of the Phœnicians, and nouriſhed him in a cave. Others pretend that Cadmus, Semele's father, diſcovering her crime, put her and the child into a wooden ark, which was carried by the tide to Oreata, a town of Liconia, where Semele being found dead was buried with great pomp and the infant nurſed by Ino, in a cave. During this perſecution, Bacchus being tired, fell aſleep, when a two-headed ſerpent, bit his leg, but awaking, he killed it by ſtriking it with a vine twig. In his infancy, ſome Tyrrhenian pirates found him aſleep on the ſhore, and intended to have carried him away, when on a ſudden their maſts were encompaſſed with vines, and their oars with ivy; and the mariners themſelves, being ſeized with a ſudden diſtraction, leapt into the ſea, and were changed into dolphins. Bacchus, during the wars of the giants, diſtinguiſhed himſelf by his valour in the form of a lion. Some ſay, that in this rebellion, the Titans cut the god to pieces; but that Pallas, taking his heart, while it was yet panting, carried it to Jupiter, who collected the limbs, and reanimated the body, after his ſoul had ſlept three nights with Proſerpine. Bacchus is ſaid to have gained great victories in the Indies, and to have taught men the art of planting the vine.

The ancients repreſented Bacchus as a youth, naked, or only covered with a tyger's ſkin, with a ruddy face, wanton look, and effeminate air; he was crowned with ivy and vine-leaves, and bore in his hand a javelin, incircled with the ſame leaves. He was painted ſitting in a triumphal chariot, drawn ſometimes by lions, or tygers, accompanied by ſatyrs and wood-nymphs, and the proceſſion cloſed with old Silenus riding on an aſs. The victims ſacrificed to Bacchus were the goat and ſwine, on account of thoſe animals being deſtructive to the vines, and the pye, from its chattering. The trees and plants uſed in his garlands were the vine, the fir, the ivy, and the oak, the herb rape-weed, and the flower narciſſus.

BACCIFEROUS *Plants*, in botany, ſuch as bear berries, or fruit covered with a thin membrane, wherein is contained a pulp. which grows ſoft and moiſt, when ripe, and incloſes the ſeed within its ſubſtance.

BACHELOR. See BATCHELOR.

BACK, in anatomy; ſee DORSUM.

BACK-ASTERN, in rowing, is to row a veſſel with her ſtern, or hinder-part, fore-moſt, contrary to her uſual motion.

BACKING *the Sails*, in nivigation, is to arrange them in a ſituation that will force the ſhip to retreat, or move backwards: this is only done in narrow channels, when a ſhip is carried along ſideways by the tide or current, and wants to avoid any thing that may interrupt her progreſs, as ſhoals, veſſels at anchor, &c. or in the line of battle, when a ſhip wants to be immediately oppoſite to another with which ſhe is engaged.

BBCK-BONE. See VERTEBRA.

BACK-PAINTING, the art of painting mezzotinto prints, paſted on glaſs, with oil-colours.

It conſiſts chiefly in laying the print upon a piece of crown glaſs, of ſuch a ſize as fits the print.

It is performed thus; take your print, and lay it in clean water for two days and two nights, if the print be on very ſtrong, cloſe, and hard gummed paper; but if upon an open, ſoft, ſpungy paper, two hours will ſometimes ſuffice, or more, according as the paper is. The paper or picture having been ſufficiently ſoaked, take it out and lay it upon two ſheets of paper, and cover it with two more; and let it lie there a little to ſuck out the moiſture. In the mean time, take the glaſs the picture is to be put upon, and ſet it near the fire to warm; take Straſburgh turpentine, warm it over the fire till it is grown fluid; then with a hog's-hair bruſh ſpread the turpentine very ſmoothly and evenly on the glaſs.

Afterwards take the mezzotinto print from between the papers, and lay it upon the glaſs; beginning firſt at one end, rubbing it down gently as you go on, till it lie cloſe, and there be no wind bladders between. Then, with your fingers, rub or roll off the paper from the back-ſide of the print, till it looks black, that is, till you can ſee nothing but the print, like a thin film, left upon the glaſs, and ſet it by to dry. When it is dry, varniſh it over with ſome white tranſparent varniſh, that the print may be ſeen through it, and then it is fit for painting. The utmoſt care will be neceſſary in rubbing or rolling the paper off the print, ſo as not to tear it, eſpecially in the light parts. You may inſtead of ſoaking your prints two days and two nights, roll them up and boil them for about two hours, more or leſs, according to the quality of the paper, in water, and that will render it as fit for rubbing, rolling, or peeling, as the other way. This being done, and your oil colours prepared, ground very fine, and tempered up very ſtiff, lay on the back ſide of the tranſparent prints, ſuch colours as each particular part requires; letting the maſter-lines of the print ſtill guide your pencil, and ſo each particular colour will lie fair to the eye on the other ſide of the glaſs, and look almoſt as well as a painted piece, if it be done neatly. The ſhadows of the print are generally ſufficient for the ſhadow of every colour; but if you have a mind to give a ſhadow by your pencil, then let the ſhadows be laid on firſt, and the other colours afterward. In laying on colours in this kind of back painting, you need not be curious as to the laying them on ſmooth. This is not at all requiſite here, where the chief aim is only to have the colours well on the fore-ſide of the print; and therefore the only care to be uſed in this work, is to lay the colours on thick enough, that its body may ſtrike the colour of it plainly through the glaſs.

BACK-STAYS, a naval term, ropes faſtened to the top-maſt heads, and reaching down behind the maſt to the outſide of the ſhip, where they are drawn extremely tight: two of them are generally formed of one rope; the middle of which is fixed on the maſt-head: their uſe is to ſuſtain the top-maſts, and keep them upright when they are preſſed with a weight of ſail, againſt which they act with a counter force.

* BACON (Sir NICHOLAS) lord keeper of the great ſeal was born at Chiſelhurſt, in Kent, in 1510, and educated at Cambridge, after which he travelled into France, and on his return ſettled at Gray's Inn, where he ſoon diſtinguiſhed himſelf by his proficiency in the ſtudy of the law. He was knighted on queen

Elizabeth's coming to the throne; and on the 22d of December, 1558, the great ſeal of England was delivered to him, with the title of lord keeper, and he was alſo made one of the queen's privy council. As a ſtateſman, he was remarkable for a clear head and deep counſels; but his great parts and high preferment were far from raiſing him in his own opinion; for when queen Elizabeth told him his houſe at Redgrave was too little for him; “ Not ſo, madam, returned he, but your “ majeſty has made me too great for my “ houſe.” Towards the latter end of his life he grew very corpulent, which made queen Elizabeth ſay merrily, that “ Sir “ Nicholas's ſoul lodged well.” To himſelf, however, this bulk was very cumberſome. At length, after having held the great ſeal more than twenty years, this able ſtateſman and faithful counſellor was ſuddenly removed from this life, by the following accident: he was under the hands of the barber, and thinking the weather warm, had ordered a window before him to be thrown open, but fell aſleep as the current of freſh air was blowing in upon him, and awaked ſome time after diſtempered all over: “ Why, ſaid he to the “ ſervant, did you ſuffer me to ſleep thus “ expoſed?” the fellow replied, that he darſt not preſume to diſturb him: “ Then “ ſaid the lord keeper, by your civility I “ loſe my life;” and ſo removed into his bed-chamber, where he died a few days after, on the 20th of February, 1578-9, equally lamented by the queen and her ſubjects. Mr. Granger obſerves, that he was the firſt lord keeper that ranked as lord chancellor: and that he had much of that penetrating genius, ſolidity, and judgment, perſuaſive eloquence, and comprehenſive knowledge of law and equity, which afterwards ſhone forth with ſo great a luſtre in his ſon, who was as much inferior to his father in point of prudence and integrity, as his father was to him in literary accompliſhments.

* BACON (Francis) viſcount St. Alban's, and lord high chancellor of England in the reign of king James I. was the ſon of Sir Nicholas Bacon, lord keeper of the great ſeal, and was born on the 22d of January, 1561. In his tender years his abilities were ſo conſpicuous, that queen Elizabeth was ſo charmed with his ſolidity and the gravity of his behaviour, that ſhe would often call him her young lord keeper. He was educated at Trinity-college, Cambridge, and made ſuch progreſs in his ſtudies, that before he was ſixteen he had not only run through the whole circle of the liberal arts as they were then taught, but began to perceive thoſe imperfections in the reigning philoſophy, which he afterwards ſo effectually expoſed. On his leaving the univerſity, his father ſent him to France, where, before he was nineteen years of age, he wrote a general view of the ſtate of Europe; but Sir Nicholas dying, he was obliged to return to England, when he applied himſelf to the ſtudy of the law, at Gray's-inn, and, in 1588, was made one of the queen's counſel; but notwithſtanding her majeſty's early prepoſſeſſion in his favour, he met with many obſtacles to his preferment during her reign; for his enemies repreſented him as a man, who, by applying too much to other branches of knowledge, could not but neglect that of his profeſſion; but his Maxims of Law and Hiſtory of the Alienation Office, both of which works were written in this reign, though they were not publiſhed till after his deceaſe, ſufficiently ſhew the injuſtice of theſe repreſentations; he alſo diſtinguiſhed himſelf, during the latter part of the queen's reign, in the houſe of commons, where he ſpoke often, and yet with ſuch wiſdom and eloquence, that his ſentiments were generally approved by that auguſt aſſembly. But notwithſtanding the little regard paid by the court to his merit, he ſerved the queen, as long as ſhe lived, and upon the acceſſion of king James, he was ſoon raiſed to conſiderable honours; for on the 23d of July, 1603, he was introduced to the king, and received the honour of knighthood. In 1611, he was appointed judge of the marſhal's court; in 1613, he was made attorney-general; in 1617, lord keeper; and, in 1618, lord high chancellor of England; the ſame year he was created baron of Verulam: and in January, 1621, advanced to the dignity of Viſcount St. Alban's; but that very year complaints were made to the houſe of commons of his lordſhip's having received ſeveral bribes, which complaints were ſent up to the houſe of lords, and new ones being daily made of a like nature, things ſoon grew too high to be got over. The king was extremely affected at the firſt news of this affair; and the lord chancellor had all the protection afforded him that was either in the power of the marquis of Buckingham, or even in the king, who actually in hopes of ſoftening things a little, procured a receſs of parliament; but this

method having a contrary effect, his lordſhip, inſtead of entering into a formal defence, threw himſelf upon the mercy of the houſe, by an humble ſubmiſſion, which he drew up in writing, and prevailed upon the prince of Wales, afterwards king Charles I. to preſent it to the houſe; and this confeſſion or ſubmiſſion he afterwards explained and confirmed, on which he was ſentenced to pay forty thouſand pounds, to be impriſoned during the king's pleaſure, to be rendered for ever incapable of any office or employment in the ſtate, and never to ſit in parliament, or come within the verge of the court. However, after a ſhort confinement in the Tower, he was diſcharged, and afterwards received a full pardon from the king. But, his virtues, his knowledge, and, above all, his zeal for mankind, will be felt while there are men, and while they have gratitude; the the name of ſir Francis Bacon, or lord Verulam, can never be mentioned but with admiration!

The honourable Mr. Walpole, calls him the prophet of arts, which Newton was afterwards to reveal; and adds, that his genius and his works will be univerſally admired as long as ſcience exiſts. ---"As long as ingratitude and adulation are deſpicable, ſo long ſhall we lament the depravity of this great man's heart.-----Alas! that he who could command immortal fame, ſhould have ſtooped to the little ambition of power!" Pope has theſe two remarkable lines on him.

"If parts allure thee think how Bacon ſhin'd,
The wiſeſt, brighteſt, *meaneſt* of mankind."

His works, which are the glory of our nation, are collected together, and printed in four volumes folio; the lord Verulam died at the earl of Arundel's houſe, at High-gate, the 9th of April, 1626, and was privately buried in the chapel of St. Mary's church, within the precincts of Old Verulam, in the chancel of which church ſir Thomas Meautys, once his ſecretary, and afterwards clerk of the council, cauſed a neat monument of white marble to be erected.

BACULÆ, in fortification, a kind of portcullis, or gate, made like a pitfall, with a counterpoiſe, and ſupported by two ſtrong ſtakes. It is uſually erected before the corps de garde, not far from the gate of a place.

BADGE, in naval architecture, an ornament placed on the quarter of ſmall ſhips, very near the ſtern, containing either a window for the convenience of the cabbin, or the repreſentation of it: it is uſually decorated with marine figures, martial inſtruments, &c.

BADGER, *Taxus*, or *Meles*, in natural hiſtory, an animal very common in many parts of England. It has a thick ſhortiſh body, with a very ſhort neck, and coarſe hair, nearly reſembling that of a hog.

It lives upon beetles and other inſects; for in its ſtomach, which is very large, great numbers of theſe have been found, mixed with the roots of graſs. Some ſay he feeds upon apples and grapes; and that he is fond of rabbits, geeſe, fowls, and other birds; but, of this, little can be ſaid with any certainty. The burrows that he makes in the earth are not only for his own ſaftey, but for the ſake of getting his food; for he finds a great many inſects under the earth, as well as the roots of plants. The fleſh of a badger is ſaid to be good eating, and to taſte like that of a boar. The fat is emollient, warm, and penetrating; and it is thought to be good to eaſe pains in fits of the gravel.

BADGER, in law books, one licenſed to purchaſe corn at one place, and ſell it at another, without incurring the penalty of an engroſſer.

BÆTYLIA, anointed ſtones, worſhipped by the Phœnicians. They were commonly of a black colour, and conſecrated to ſome god, as Saturn, Jupiter, the Sun, &c.

BAFFETAS, or BAFTAS, a cloth made in the Eaſt-Indies, from coarſe white cotton thread. Thoſe of Surat are reckoned the beſt. Broad brown and narrow-brown baffetas are made of thread before it has been bleached. The former are fourteen ells long, by half an ell broad; the latter of the ſame length, and three quarters in breadth.

BAG, in commerce, a certain quantity of ſome particular commodity; as a bag of almonds, for inſtance, is about three hundred weight; of aniſeeds, from three to four hundred, &c. Bags are uſed, in moſt countries, to put ſeveral ſorts of coin in, either of gold, ſilver, braſs, or copper. Bankers, and others, who deal much in current caſh, label their bags of money, by tying a ticket or note at the mouth of the bag, ſignifying the coin therein contained, the ſum total, its weight, and of whom it was received. Tare is allowed for the bag.

BAGGAGE in the military art, the neceſſaries, utenſils, apparel, &c. of the
officers

officers and ſoldiers. The baggage includes alſo women, children, ſuttlers, &c. The baggage-waggons before a march are appointed a rendezvous, where they are marſhalled by the waggon-maſter general, according to the rank the ſeveral regiments bear in the army. On a march, they are ſometimes ordered to follow the reſpective columns of the army, ſometimes to follow the march of the artillery, and ſometimes to make a column of themſelves. The general's baggage is commonly firſt. If the army march from the right, the baggage of that wing has the van; if from the left, the baggage of the left has the van. Each waggon has a diſtinguiſhing flag, to ſhew to what regiment it belongs.

BAGNIO, an Italian word, ſignifying a bath: we uſe it for a houſe with conveniences for bathing, cupping, ſweating, and otherwiſe cleanſing the body; and too frequently for worſe purpoſes.

BAGPIPE, a muſical wind inſtrument chiefly uſed in the North: it conſiſts of two principal parts; the firſt a leathern-bag, which blows up like a foot-ball, by means of a port-vent, or little tube, fitted to it, and ſtopped by a valve: the other part conſiſts of three pipes or flutes; the firſt called the great pipe, or drone; and the ſecond, the little one; which paſs the wind out only at the bottom: the third has a reed, and is played on by compreſſing the bag under the arm, when full, and opening or ſtopping the holes, which are eight, with the fingers. The little pipe is ordinarily a foot long; that played on, thirteen inches; and the port-vent ſix.

BAHAR, or BARR, a weight uſed in Ternate, Mocha, in the Moluccas, Achem, and divers other parts of the Eaſt-Indies. The great Bahar is 481 pounds 4 ounces, and the little, 401 pounds, 7 ounces, Paris meaſure.

BAIL, in law, the ſetting at liberty a perſon arreſted, or impriſoned, upon an action, either civil or criminal, upon ſureties taken for his appearance at a day and place aſſigned; and is ether common or ſpecial. Common bail is in actions of ſmall prejudice, or ſlight proof, in which caſe almoſt any ſureties are taken. Special bail is that given in caſes of greater moment. It was ſome years ago enacted, that no perſon ſhould be held to ſpecial bail in any action brought for leſs than ten pounds; but this is only obſerved as to writs iſſued out of the courts of Weſtminſter-Hall; for the marſhal's court continues to arreſt and hold to ſpecial bail in actions exceeding forty ſhillings. By the common-law, all perſons might be bailed till they were convicted of the offence laid to their charge: but it is enacted, by ſtatute, that murderers, outlaws, houſe-burners, thieves, openly defamed, ſhall not be bailed. However, this ſtatute does not extend to the court of the king's-bench, which bails in all caſes whatſoever, and may bail even for murder, of which we have had a very recent inſtance.

Clerk of the BAILS, an officer of the court of the king's bench: he files the bail-pieces taken in that court, and attends for that purpoſe.

BAILIFF, an officer appointed for the adminiſtration of juſtice within a certain diſtrict, called a bailiwick.

There are alſo bailiffs of foreſts, and bailiffs of manors, who direct huſbandry, fell trees, gather rents, pay quit-rents, &c.

BAILIWICK, that liberty exempted from the ſheriff of the county, over which liberty the lord therof appoints his own bailiff, with the like power within his precinct, as an under-ſheriff exerciſes under the ſheriff of the county: or it ſignifies the precinct of a bailiff, or the place within which his juriſdiction is terminated.

BAIRAM, a yearly feſtival of the Turks, which they keep after the faſt of Ramazan. The Mahometans have two bairams, the great and the little. The little bairam holds for three days, and is ſeventy days after the firſt, which follows immediately the Ramazan.

BAIT, among fiſhermen, a ſubſtance proper to be faſtened to a hook, to lure and catch the different ſorts of fiſh.

Baits are of two ſorts. 1. The natural ones, as maggots, bobs, frogs, &c. 2. Artificial baits, whether ſuch as imitate the living baits, or paſtes of ſeveral compoſitions and figures. Sheep's blood and cheeſe are reckoned good baits in April; the bobs dried, waſps, and bees, are for May; brown flies for June; maggots and hornets for July; ſnails in Auguſt; graſhoppers in September; corn and bramble berries at the fall of the leaf: the red-earth worm is good for ſmall fiſh all the year round; and ſmall fiſh are good baits for pikes at all times. There are ſeveral baits for intoxicating of fowls, and yet without tainting or hurting their fleſh: for the greater ſort of land-fowls, the bait may be made thus: Take a peck, or a leſſer quantity, of wheat rye, &c. with which mix two handfuls of nux vomica; boil them together till they are almoſt ready to burſt; ſtrew them upon the land where you deſign to take the fowl, and ſuch as eat thereof will be intoxicated, and lie as if dead. Small birds may be taken with only this alteration; inſtead of wheat, or the like grain, take hempſeed, &c.

BAKING, the art of preparing bread, or of reducing meal of any kind, into bread. See BREAD, &c.

* Baking of bread was invented 1400 years before Chriſt.

BALANCE, or BALLANCE, *Libra*, one of the ſix ſimple powers in mechanics, principally uſed in determining the difference of weights in heavy bodies, and conſequently their maſſes or quantities of matter. The ballance is of two kinds, the ancient and the modern. The ancient, or Roman, called alſo the ſtatera Romana, or ſteel-yard, conſiſts of a lever or beam, moveable on a center, and ſuſpended near one of its extremities: the bodies to be weighed are applied on one ſide of the center, and their weight is ſhewn by the diviſion marked on the beam, where the weight, which is moveable along the lever, keeps the ſteel-yard in equilibrio. This balance is ſtill frequently uſed in weighing heavy articles. The modern balance now generally uſed conſiſts of a lever or beam ſuſpended exactly in the middle, having ſcales hung to each extremity.

The lever is called the jugum or beam, and the two moieties thereof on each ſide the axis, the brachia or arms. The line on which the beam turns, or which divides its brachia, is called the axis; and when conſidered with regard to the length of the brachia, is eſteemed a point only, and called the center of the balance: the handle whereby it is held, or by which the whole apparatus is ſuſpended, is called trutina; and the ſlender part perpendicular to the beam, whereby either the equilibrium, or preponderancy of bodies is indicated, is called the tongue of the balance.

Aſſay BALANCE, a very nice balance uſed in docimaſtical operations, to determine exactly the weight of minute bodies. This balance ſhould be made of the beſt ſteel, and of the hardeſt kind; becauſe that metal is not ſo eaſily ſpoiled with ruſt, as iron; and it is more apt than any other to take a perfect poliſh, which at the ſame time prevents the ruſt. The ſtructure of the aſſayer's ſcale is little different from that of common ſcales, otherwiſe than by its nicety and ſmallneſs. The longer the beam of it is, the more exact may the weight of a body be found; however, ten or twelve inches are a ſufficient length. Let the thickneſs of it be ſo little, that two drams may hardly be hung at either of its extremities, without its bending; for the largeſt weight put upon it ſeldom exceeds one dram. The whole ſurface of this beam muſt be altogether without ornaments, which only increaſe the weight, and gather duſt, &c. The beam is ſuſpended in a fork, the two legs of which are ſteel-ſprings joined at top, but kept together below with a braſs pliant claſp, parallel, and two lines and a half diſtant from each other. This claſp being taken off, and the legs of the fork being ſtretched out, the axis of the beam may be put into two holes made for that purpoſe at the ends of the legs, or be taken away from them. Let a very ſharp needle be fixed in the head of the fork, ſtanding perpendicularly downwards, if the fork is ſuſpended, and ſo long, as that it may almoſt touch the top of the tongue of the beam, put into the fork, when in equilibrio. This needle is the mark of the equilibrium; and, that the artiſts may be able to obſerve this, the legs of the fork muſt be broader in that place, and have an opening two or three lines wide: then take two ſcales made of a thin plate of ſilver, one inch and a half in diameter, hanging on three ſmall ſilk ſtrings, almoſt as long as the beam, tied together at top, with a ſilver hook, in form of an S, and hang them to the extremities of the beam: a ſmaller ſilver diſh, or blued ſteel, ſomewhat leſs than one inch in diameter, belongs to each of theſe ſcales. You firſt put into theſe diſhes, with a pair of pincers, the bodies to be weighed, or with a ſpoon or a ſmall ſhovel, when they are pounded, and then you put them into the ſcales; therefore the ſmall diſhes muſt be perfectly equal in weight. We uſe them, that bodies may be more conveniently put into and taken out of the ſcales, and that theſe, which are vaſtly thin, may not be bent or ſoiled, and thence rendered falſe by wiping. This balance is ſuſpended on a moveable braſs or copper-ſupport, which conſiſts of a pedeſtal, and of a column ſet upon it about twenty inches high, at the top of which comes out at right angles an arm one inch long. At the extremity of this arm, put a ſmall pulley three lines in diameter: another at the top of the column, and a third near the bottom of it: all which pullies muſt turn very eaſily on their axes. At the diſtance of one inch and a half below the upper-arm, let another arm, one inch and a half long, come out of the column at right angles, having a hole through it two lines long, a quarter of a line broad, and placed perpendicularly below the pulley of the upper arm, to receive a ſmall plate, one inch and a half long; and of ſuch breadth and thickneſs, as that it may freely move up and down, and yet not have too much play within the hole. This plate muſt alſo have a ſmall hook at each extremity.

Hydroſtatic BALANCE, an inſtrument to determine accurately the ſpecific gravity of both ſolid and fluid bodies.

BALANCING, among ſeamen, a ſingular method of contracting or reducing a ſail in a tempeſt, in contradiſtinction to reefing, which is common to all the principal ſails; whereas none are balanced but the mizen and main-ſails ſet on booms.

BALANUS MARINUS a ſea ſhell-fiſh, of an oblong figure, approaching to that of an acorn, open at the mouth or top, and compoſed of ſeveral portions, or valves, from ſix to twelve in number, not moveable or looſe, as in the other bivalve or multivalve ſhell, but fixed in one another by an intermediate ſubſtance: the animal inhabiting this ſhell is called a triton. See TRITON.

BALAUSTINE, large roſe-like flowers, the produce of the wild or double-flowered pomegranate-tree, a low prickly tree or ſhrub, a native of the ſouthern parts of Europe; but cultivated in ſome of our gardens, on account of the beauty and continuance of its flowers. Balauſtine flowers are mildly aſtringent and corroborant; of a moderately rough and ſomewhat bitteriſh taſte, and of little or no ſmell or particular flavour.

* BALCHEN (Sir JOHN) a brave Engliſh admiral, was born the 2d of Feb. 1669, and at a proper time entered on board the royal navy, where he ſerved ſeveral years, in inferior ſtations, but, in 1697, was appointed captain of the Virgin prize, and was always afterwards conſidered as one of the moſt active commanders in the royal navy. He commanded the Shrewſbury in that glorious action near Sicily, in which the Spaniſh fleet was almoſt totally deſtroyed by that of Great Britain commanded by ſir George Byng. In 1728, he was made rear-admiral of the blue; and in 1731, commanded under ſir Charles Wager, when Don Carlos was placed on the throne of Naples. In 1734, he was made rear-admiral of the white; in 1739, vice-admiral of the red; in 1743, admiral of the white; and in 1744, governor of Greenwich hoſpital. Soon after ſir Charles Hardy having been ſent with a large convoy of ſtore-ſhips to admiral Mathews in the Mediterranean, and ſir Charles being blocked up in the Tagus, the miniſtry pitched upon admiral Balchen, who now ſailed with a large fleet for this important ſervice, with his flags hoiſted on board the Victory, the largeſt and fineſt ſhip in the royal navy, and having joined ſir Charles's ſquadron, convoyed him to Gibraltar, the French at his approach retiring into Cadiz. After this, ſir John proceeded to cruize on the coaſt of Portugal, in hopes of coming up with ſome of the Breſt fleet; but being informed that the French had ſheltered themſelves under the fortifications of Cadiz, he continued his courſe for England; and the 3d of October, 1744, being overtaken by a ſtorm, which diſperſed the fleet, and the Victory being driven on the Caſkets, ſunk, and every perſon on board her periſhed. The crew conſiſted of eleven hundred. The whole nation ſhewed a generous concern for this terrible misfortune; and his late majeſty ſettled a penſion of five hundred pounds per annum on the admiral's lady during her life; and to perpetuate his memory, a ſmall but elegant monument was erected for him in Weſtminſter-abbey, in which his buſt is well executed in the fineſt marble.

BALCONY, in architecture, a projecture in the front of a houſe, or a kind of open gallery, for people to ſtand in, to behold any public ſhow, or to take the air in. They are uſually level with the firſt floor, and are made of wood or iron.

BALE, in commerce, is ſaid of merchandizes packed up in cloth, and corded round very tight, in order to keep them from breaking. The bales are always to be marked and numbered, that the merchants to whom they belong may eaſily know them. A bale of cotton yarn is from three to four hundred weight; of raw ſilk, from one to four hundred; of lockram or dowlaſs, either three, three and a half, or four pieces.

BALE-GOODS, among the Engliſh merchants, ſuch as are imported or exported in bales.

BALK, among builders, uſed by ſome for the ſummer-beam of a houſe; by others for the poles and rafters, which ſupport the roofs of barns, &c. and ſometimes for the beams uſed in making ſea-holds.

BALL, a ſpherical and round body, either naturally ſo, or turned into that form. There are balls of common wood, of box, of iron, &c. The word ball is alſo uſed to ſignify ſome tools and inſtruments of ſeveral arts and trades, becauſe they bear ſome reſemblance to balls.

BALL, in the military art, a compoſition of divers ingredients, generally of the combuſtible kinds, ſerving to burn, ſmoak, give light, &c.

Fire BALLS, *globi incendiarii*, are bags of canvas filled with gun-powder, ſulphur, ſalt-petre, pitch, &c. to be thrown by the ſoldiers, or out of mortars, in order to fire the houſes, incommode trenches, advanced poſts, or the like.

Light BALLS, *globi lucentes*, ſuch as diffuſe an intenſe light around; or they are balls which, being caſt out of a mortar, or the hand, burn for ſome time, and illuminate the adjacent parts.

Smoak or Dark BALLS, are thoſe which fill the air with ſmoak, and thus darken a place to prevent diſcoveries.

Stink BALLS, *globi fœtentes*, thoſe which yield a great ſtench where fired to annoy the enemy.

Sky BALLS, *globi aerii*, are thoſe caſt on high out of mortars, and which, when arrived at their height, burſting like rockets, afford a ſpectacle of decoration. Theſe are ſometimes intermixed with crackers and other combuſtibles, making rains of fire, &c.

Water BALLS, *globi aquatici*, thoſe which ſwim and burn a conſiderable time in the water, and at length burſt therein.

BALL *of a Pendulum*, the weight at the bottom. In ſhorter pendulums, this is called the bob. See BOB.

BALL, among printers, a kind of wooden tunnel ſtuffed with wool, contained in a leather cover, which is nailed to the wood, with which the ink is applied on the forms to be wrought off. The preſs-man, holding one of theſe balls with either hand, firſt daubs them on the ink-block, and afterwards on the forms, which retain the ink neceſſary to make an impreſſion.

Horſe BALLS, among farriers, a kind of cordial medicine, adminiſtered in the form of balls, ſuppoſed of great virtue for feeding and ſtrengthening ſound, as well as healing and raiſing unſound horſes. Markham's horſe balls are a preparation of aniſeeds, carthamums, elicampane, and other ingredients wrought into a ſtiff paſte, and thence formed into balls. They are cleanſing and emollient, efficacious in colds, ſurfeits, and hard labour, and eſpecially uſeful where any of the chief viſcera are decayed: nothing raiſes a lean horſe ſo ſoon, being partly food and partly phyſic. *Ruſt. Dict. Farr. Dict.*

Chewing BALLS are thoſe which the horſe keeps champing or maſticating in his mouth, a conſiderable time, without ſwallowing. Theſe are chiefly uſed for a loſt appetite, a thing very incidental to horſes. They are uſually made of aſafœtida, liver of antimony, juniper, bay-wood, and pellitory of Spain, beaten and incorporated into a maſs with verjuice. The method of adminiſtration is to wrap one of the balls in a linen cloth, and having a ſtring faſtened to it, make the horſe chew it three or four hours at a time. *Ruſt. Dict.*

BALL and SOCKET is an inſtrument made of braſs, with a perpetual ſcrew, ſo as to move horizontally, vertically, and obliquely; and is generally uſed for the managing of ſurveying inſtruments, and aſtronomical inſtruments.

BALLAD, a ſpecies of ſong, or air, adapted to the lower claſs of people.

BALLANCE, ſee BALANCE.

BALLANCE *of a Clock or Watch*. See CLOCK and WATCH.

BALLAST, any heavy matter, as ſtones, gravel, iron, &c. thrown into the hold of a ſhip, to make her ſink a proper depth in the water, that ſhe may be capable of carrying a ſufficient quantity of ſail without overſetting.

BALLIAGE, a ſmall duty paid to the city of London by aliens, and even denizens, for certain commodities exported by them.

BALLOON, or BALLON, in a general ſenſe, any hollow body of a ſpherical form, be its compoſition or uſes what they will.

BALLOON, in chemiſtry, a large receiver of a round form, and very ſhort neck.

BALLOON, in architecture, a round ball or globe, placed on the top of a pillar, &c. by way of crowning.

BALLOON, in pyrotechny, a kind of bomb made of paſte-board, and played off in fire-works, either in the air or water, in imitation of a real bomb.

BALLS, or BALLETS, in heraldry, make a frequent bearing in coats of arms, but acquire other denominations from their ſeveral colours. Thus, when the colour is or, they are termed *beſants*; when argent, *plates*; when azure, *hurts*; when gules, *torteaux*; when vert, *pomeis*; when ſable, *agreſſes*; when purple, *golpes*; when tanne, *orenges*; and when ſanguine, *guzes*.

BALLUSTER, in architecture, a kind of ſmall pillar uſed in balluſtrades.

BALLUSTRADE, a row or ſeries of balluſters joined by a rail, and fixed on a terras or the top of a building by way of ſecurity; as alſo to incloſe balconies, altars, fonts, ſtaircaſes, bridges, &c.

BALM, ſee BALSAM.

BALM, in botany; ſee BAUM.

* BALMERIUS, lord, beheaded for high treaſon in Auguſt 1746. Balmerius had been bred to arms, and acted upon principle; he was unpoliſhed in his manners, brave, rough, and reſolute; eyed the implements of death with the moſt careleſs familiarity, and ſeemed to triumph in his ſufferings.

BALNEUM, a term uſed by chemiſts to ſignify a veſſel filled with ſome matter, as ſand, water, or the like, in which others are placed for performing various operations that require leſs heat than a naked fire.

BALNEUM *Arenoſum*, or *Siccum*, a ſand, or dry heat; a veſſel filled with ſand, aſhes, or filings of ſteel.

BALNEUM *Mariæ*, or *Maris*, a veſſel filled with water, which is made to boil, and in which the veſſels containing the ingredients are placed.

BALNEUM *Vaporis*, a vapour bath.

BALSAM, *Balſamum*, an oily, reſinous, and odorous ſubſtance, flowing either ſpontaneouſly, or by inciſion, from certain plants, of great virtues in the cure of ſeveral diſorders.

BALSAM *of Gilead*, or *of Mecca*, *Opobalſamum*, is the moſt precious of all balſams; and is commonly called balm of Gilead. It is the produce of certain trees, which grew formerly in the valley of Jericho; and were removed to Grand Cairo, and afterwards to Mecca, where the balſam plantation is now guarded by janiſſaries, and the reſinous juice collected for the ſultan only. We cannot imagine, that what is ſold by the druggiſts under the name of this balſam, at no very great price, is the true ſort: it is either the native juice of another kind of tree, or what is more probable, a compoſition of balſam of copaiba with diſtilled oils, &c. Hence we meet with opobalſams very different from one another, or agreeing only in external appearance. The true balſam is of a pale yellowiſh colour, clear and tranſparent, about the conſiſtence of Venice turpentine; of a ſtrong, penetrating, agreeable, aromatic ſmell, and a ſlightly bitteriſh pungent taſte: by age it becomes yellower, browner, and thicker, loſing by degrees, like eſſential oils, ſome of its finer and more ſubtile parts. To ſpread, when dropped into water, all over the ſurface, and to form a fine, thin, rainbow-coloured cuticle, ſo tenacious, that it may be taken up entire by the point of a needle, were formerly held infallible criteria of the genuine opobalſam. But it has been obſerved, that other balſams, when of a certain degree of conſiſtence, exhibit theſe phænomena equally with the genuine.

It is uſed in medicine to open obſtructions of the lungs, and to heal eroſions from acrimony, and the worſt kinds of ulcerations. It is alſo preſcribed in aſthmas, pleuriſies, and whenever expectoration is neceſſary, in internal bruiſes, and to cleanſe the urinary paſſages.

BALSAM *of Tolu*, is of a thicker conſiſtence than the foregoing, and more of a browniſh colour. When freſh, it has an exceeding pleaſant ſmell, ſomewhat reſembling that of citrons. It is the produce of New Spain, and is ſaid to exude in very hot weather from inciſions made in the bark of a ſmall tree of the fir kind, called tolu. This balſam is one of the moſt elegant and grateful of the ſubſtances of this claſs, and does not loſe much of its fragrance when by age it grows conſiſtent. It yields very little eſſential oil in diſtillation, but impregnates the diſtilled water ſtrongly with its flavour. By diſſolving in this water, in a gentle warmth, a proper quantity of fine ſugar, we obtain a balſamic ſyrup, greatly ſuperior to that made in the common manner with a decoction of the balſam. It is given in convulſions, and other diſorders of the breaſt, ſometimes in the form of pills, and ſometimes in electuary; but the beſt form of giving it is in emulſion, diſſolved in the yolk of an egg, and then mixed with water.

BALSAM *of Copaiba*, *Cophahu*, *Copaiſ*, *Campaiſ*, *Copalyva*, or *Gamelo*, is obtained from a tree of the ſame name, growing in the Brazils, near Rio de Janeiro. This balſam is of a pale yellowiſh colour, and thin conſiſtence. It is obſervable, that on mixing this juice with the watery ſpirit of ſal ammoniac, made by quicklime, a frothing, or effervеſcence, as it is called, enſues, ſtronger and of longer continuance than that produced by the ſame ſpirit with any other natural balſam: by this mark we may diſtinguiſh the genuine copaiba from the thin reſin of the turpentine or fir tree, which is frequently mixed with or vended for it. This balſam is at preſent of very common uſe as a medicine.

The copaiba-tree is one of the large foreſt trees of Brazil and ſome other parts of America. Mr. Ray calls it *Arbor balſamifera Brazilienſis fructu monoſpermo.* The wood is of a deep red colour, and great hardneſs; and hence is employed in ornamental mechanic works, and is ſaid to be uſed alſo in dying. The balſam is extracted by making deep inciſions in the trunk of the tree, in the middle of the ſummer heats. It is ſaid that twelve pounds iſſue from one tree in a few hours; but that after once bleeding, it never affords any more. It is more deterſive and more fragrant than common turpentine; paſſes very quickly by urine, and greatly aſſiſts in cleanſing thoſe paſſages; for which reaſon it is frequently given in gonorrhœas, and all obſtructions and ulcerations of thoſe parts.

BALSAM *of Peru* is obtained from certain trees of Peru and Mexico, differing ſomewhat from one another in appearance, and ſomewhat alſo in the quality of their juices. There are three ſorts of balſam of Peru: 1. A pale yellowiſh, called white, in appearance ſomewhat reſembling the opobalſam, and like it of a ſtrong ſmell: this is the native juice, collected and preſerved in the ſame ſtate wherein it iſſues from the tree. Among us, it is rarely or never met with. 2. A dry balſam, or the foregoing inſpiſſated by the ſun's heat, in calabaſhes, or gourd-ſhells, in which it is ſometimes brought into Europe: this has ſomewhat of a reddiſh colour, and ſtill ſmells very agreeably. 3. The common or black Peruvian balſam of the ſhops. This ſort is artificially extracted from the bark, branches, and leaves of the tree, by cutting them in pieces, and boiling them in water. The balſam is ſaid to ſeparate, and ariſe to the ſurface, from whence it is taken off.

It is of a thick conſiſtence, like honey; of a dark black colour in the maſs, but when ſpread thin of a clear reddiſh or yellowiſh brown, of an agreeable ſtrong ſmell, ſomewhat approaching to that of a mixture of benzoine and ſtorax, and of a bitteriſh pungent taſte, eaſily inflammable, not in the leaſt miſcible with water, nor rendered turbid or white on being agitated with that fluid. It becomes ſoluble in water, like the other balſams, by the mediation of yolk of eggs, or of ſugar; when diſſolved by the latter, it ſoon ſeparates from the water, whilſt the former keeps it much longer ſuſpended. It is of a heating and drying quality, and is frequently uſed externally in the cure of wounds. The perfumers alſo uſe it on account of its agreeable ſmell.

Odoriferous BALSAMS, a fragrant kind of ungnents, generally of a thick conſiſtence, compoſed of ſome fatty, denſe juice, joined with ſome diſtilled oils of various kinds. Boerhaave's method of preparing theſe balſams, is this: Melt an ounce of fine pomatum, in a China veſſel, over a ſmall and perfectly clear fire; then gradually add a dram of white wax, ſhaved into thin pieces: after theſe are perfectly blended together, remove the veſſel from the fire; and when the matter begins to thicken in cooling, drop in, by ſlow degrees, a dram of any of the fragrant eſſential oils; keep the whole continually ſtirring, all the time the oil is dropping in, that it may perfectly mix: after which, ſet the veſſel in cold water, that the whole matter, immediately condenſing by the cold, may keep in the oil and ſpirit. When the balſam is thoroughly cold, put it immediately up in veſſels of lead or pewter; and, if theſe are cloſe covered, it will keep perfect a great many years. Inſtead of pomatum and wax, the expreſſed oil of nutmeg may be uſed in this proceſs, after it has been waſhed in water, till perfectly inſipid, white, and inodorous. Theſe balſams are prepared as rich perfumes, to raiſe the languid ſpirit; and the nobleſt and richeſt of the eſſential oils ſhould therefore be uſed in them. The oils, principally directed by Boerhaave to this purpoſe, are thoſe of balm, calamus aromaticus, cinnamon, cedar, citron, cloves, jaſmin, lavender, white lillies, marjoram, mace, nutmegs, origanum, oranges, both thoſe of China and Seville; roſes, rhodium, and yellow ſaunders; to which may be added, the natural balſams of Peru and Gilead; theſe two being ſpontaneouſly fragrant without diſtillation. *Boerhaave's Chemiſtry.*

BALSAMICS, in pharmacy, ſoftening, reſtoring, healing, and cleanſing medicines, of gentle attenuating principles, very friendly to nature. Theſe medicines, are not only grateful and agreeable to the conſtitution, but act upon the fluids, as well as the ſolids, of human bodies; diffuſing their virtues through every part, and ſupplying the blood and humours with a ſeaſonable reinforcement of ſulphureous, warm, and ethereal parts, increaſing their inteſtine motions, and conveying vigour to the vital juices. Theſe medicines may be uſed with great ſucceſs, both internally and externally, in all diſeaſes of the head, nerves, ſpinal marrow, ſtomach and heart; ſuch as palſies, apoplexies, numbneſs and torpor of the ſenſes, weakneſs of the memory, difficulty of hearing, exceſſive weakneſs and faintings; they are alſo of ſingular ſervice in moſt diſorders of the ſtomach and inteſtines, and are exquiſitely adapted to the old and infirm.

BALSAMINA, *Balſamine*, in botany, the name of a genus of plants, whoſe flower is of the polypetalous anomalous kind; and is, in ſome ſpecies, four-leaved, and, in others, ſix-leaved. In the four-leaved flowers, the upper leaf is arched, and the lower hollowed, and terminated by a tail, and the two ſide-leaves are large. In the ſix-leaved flowers of this genus, the flower leaf has no tail.

* BALTIC SEA, a great gulph of the German ocean, between the coaſts of Germany, Poland, Sweden, and Denmark. It forms ſeveral other gulphs, as, that of Bothnia, Finland, Livonia, and Dantzick, and flows into the ocean through a ſtrait called the Sound. Yellow amber is found here in great quantities. It is generally frozen three or four months in the year.

BALTIMORE, a town of Ireland, in the county of Cork, ſeated on a headland, which runs fifteen miles into the ſea, fifteen miles ſouth-weſt of Roſſe. Long. 9. 10. W. lat. 51. 15. N.

BAMBOE, in botany, a plant that multiplies very much by its root, from which ſprings a ramous or branchy tuft, after the manner of the European reeds; of which, as well as the ſugar-cane, it is a ſpecies. The Indian bamboe is the largeſt kind of cane hitherto known. It is of an extraordinary height and bigneſs when it bears its bloſſom; each ſhoot or cane is often, at the bottom, as large as a man's thigh, and decreaſes gradually to the top, where it bears a bloſſom or flower like our reeds, in their proper ſeaſon.

The bamboe grows in all the maritime countries in the Eaſt Indies. Its leaves are like thoſe of the other canes or reeds, but neither ſo long nor ſo broad at their baſe. With theſe bamboes the Indians build their houſes, and make all ſorts of furniture, in a very ingenious manner.

From the time of their firſt appearance, till they attain their full perfection, when they are either cut down, or of themſelves begin to dry, moſt of their tubes contain a quantity of water; with this remarkable difference, that at full moon they are entirely or very nearly full; and with the decreaſe of the moon, the water ebbs, till at the conjunction little or none is to be found. This water is ſaid to be an excellent preſervative againſt the ill conſequence of any bruiſes; at leaſt it is drank as ſuch by all who come from the mountains, where ſuch accidents are unavoidable.

BANANA-TREE, a ſpecies of the muſa or plantain, growing plentifully in the Eaſt and Weſt Indies. Its leaves are near two yards long, and twelve inches wide. The fruit is ſix or ſeven inches long, and covered, when ripe, with a yellow and tender ſkin. It grows upon a ſtalk, bearing only one ſingle cluſter or bunch, which perhaps conſiſts of forty or fifty bananas. When the bunch is gathered, they cut off the ſtalk, otherwiſe it would bear no more fruit. The pulp of the fruit is as ſoft as marmalade, and of a very pleaſant taſte; it is ſaid to be very nouriſhing, to excite urine, and provoke to venery.

BAND, in a general ſenſe, a ſmall, narrow ligament, wherewith any thing is bound, tied, or faſtened.

BAND *of Soldiers*, in military affairs, thoſe who fight under the ſame flag or enſign.

BAND *of Penſioners*, a company of one hundred and twenty gentlemen, who receive yearly one hundred pounds for attending on his majeſty on ſolemn occaſions.

BANDAGE, in ſurgery, a fillet, roller, ſwathe, &c. applied to any part of the body. The matter of which bandages are generally compoſed, is linen cloth; the neceſſary conditions of which are, firſt, that it be clean, partly for decency, and partly that it may not be offenſive to the wound. Secondly, that it be not quite new, but wore for ſome time, which will render it more ſoft and ſmooth; but it ought not to be wore thin, becauſe that would make the bandage too weak, and ſubject to break. Thirdly, that it be ſtrong, conſiſting of threads neither very coarſe, nor very fine. Fourthly, that it have no looſe threads, knots, or hems, nor any ſeams that can be avoided; but if the length of the bandage ſhould make ſeams neceſſary, they ſhould be as even and as few as poſſible.

BANDELET, or BANDLET, in architecture, any little band, or flat moulding, as that which crowns the Doric architrave.

BANDEROLL, a little flag, extended more in length than breadth, uſed to be hung out on the maſts of the veſſels, &c.

BANDITTI, companies of highwaymen common in Italy, Sicily, and France; but ſometimes alſo uſed, in a more general ſenſe, for robbers, pirates, out-lawed perſons, ruffians, &c.

* **BANIANS**, a Pagan people, ſpread over moſt parts of the Eaſt Indies; they may be diſtinguiſhed from the Mahomedans, by their dreſs; for they do not ſhave their heads, and have a yellow ſpot in their foreheads, made by the prieſt. Their women do not cover their faces, and their garments are quite open before, from their breaſts to their navels. They colour their teeth black, and think it diſgraceful to have white teeth, like dogs and monkeys; they are very fond of bracelets and jewels, for they cover their ears, in a manner, all over with pearls. The children of both ſexes go naked till they are five years old. The men in thoſe parts, like the Jews in Europe, deal in every ſort of commodity, but proviſions of fleſh or fiſh, for as they eat no kind of animal food themſelves, they will not ſell or diſtribute it to others. They are the moſt humble and patient people in the world. Whenever they quarrel, it never ariſes to blows. The very killing of a fly with them is criminal. The horror they have for blood will never permit them to go to war; and their feeble vegetable diet, with the extreme heat of the ſun, which exhales their ſpirits, renders their conſtitutions weak and effeminate, producing a tractable diſpoſition, and a ſmooth regular deportment. They have as many different ſuperſtitions as they have trades or callings among them. They marry their children at ſeven, eight, or nine years of age, and the girls ſeldom or never ſtay till twelve. When the wedding-day arrives, the parents ſit in a hall round a fire, and cauſe the bridegroom and the bride to take three turns about it, during which the prieſt pronounces certain words, which ſerve for a nuptial benediction. The Banian widows are not permitted to take a ſecond huſband, but have their hair cut off, and their jewels taken away, which is the reaſon they are ſo ready to burn themſelves with the bodies of their dead huſbands. But the Mahomedans will not permit this to be practiſed ſo much as formerly, nor can they do it at all without leave from the governor. Thoſe widows that cannot bear a ſingle life, liſt among the dancers, and then they are free for every body. The men may marry again more than once, and even when the firſt wife is alive, if ſhe is barren. However, the firſt bears the ſway in the family.

The Banians believe in general that there is but one God, creator of the univerſe, and that there are ſubordinate deities, which are the objects of worſhip. Their many different idols in gold, ſilver, braſs, &c. have a ſtrange variety of ſhapes, and it would take up a volume to deſcribe them. Their pagods or temples are not only in towns, but upon the highways, in mountains and woods, where they keep lamps perpetually burning, and ſome of them have no other ornaments but fantaſtical paintings on the walls. A principal part of their religion conſiſts in outward purifications, of which, bathing or waſhing is the principal. They hold the tranſmigration of ſouls, and affirm they paſs into the bodies of beaſts. Thoſe that enter into the body of a cow are ſuppoſed to be moſt happy, and that the expiation of their ſins will be ſooner complete, than if they had animated any other beaſt.

BANISHMENT, a kind of puniſhment, whereby the guilty perſon is obliged to leave the realm.

By Magna Charta, none ſhall be outlawed, or baniſhed his country, but by lawful judgment of his peers, according to the law of the land, 9 Hen. III. 29.

BANK, in commerce, a common repoſitory, where many perſons agree to keep their money, to be always ready at their call or direction: or certain ſocieties or communities, who take the charge of other people's money, either to improve it, or to keep it ſecure. There are banks of various kinds, and different in the nature of their conſtitutions and eſtabliſhments; ſome are inſtituted wholly on the public account, and put under the direction of the magiſtrates, as the famous bank of Amſterdam, where the money depoſited therein ſhall be always kept for the uſe of the proprietors, and ſhall never be let out for profit or advantage. A ſecond ſort of bank is ſuch as conſiſts of a company of monied men, who being duly eſtabliſhed, and incorporated by the laws of their country, agree to depoſit a conſiderable fund, or joint ſtock, to be employed for the uſe of the ſociety; as lending money upon good ſecurity, buying and ſelling bullion, gold and ſilver, diſcounting bills of exchange, &c. A third ſort is the banks of private men, or partnerſhips, who deal in the ſame way as the former, upon their own ſingle ſtock, or credit; and ſuch are the Lombard-ſtreet, or other bankers, as they are called. There are public banks eſtabliſhed in moſt of the trading cities of Europe, as in Venice, London, Paris, Amſterdam, Hamburgh, &c. The bank of Venice is the moſt ancient. It is eſtabliſhed by a ſolemn edict of the common-wealth, which enacts, that all payments of wholeſale merchandize, and letters of exchange, ſhall be in bank notes, that all debtors ſhall be obliged to carry their money to the bank, and all creditors receive their money from the bank; ſo that payments are performed by a ſimple transfer, from the one perſon to the other. In matters of retail, effective payments are ſometimes made, which do not diminiſh, but rather augment the ſtock, by reaſon of the liberty of withdrawing the money at pleaſure.

* BANK *of England* was eſtabliſhed in 1693.

BANK, in natural hiſtory, an elevation of the ground, or bottom of the ſea, ſo as ſometimes to ſurmount the ſurface of the water. In this ſenſe, bank amounts to much the ſame as flat, ſhoal, &c. There are banks of ſand, and others of ſtone, called alſo ſhelves, or rocks. In the North-ſea they alſo ſpeak of banks of ice, which are large pieces of that matter floating.

BANKS at ſea, are uſually diſtinguiſhed by a buoy, poſt, or the like. On charts, ſand-banks are uſually marked by little dots, and banks of ſtone, by croſſes. The colours of the buoys are alſo varied accordingly, ſand-banks being denoted by light-coloured buoys, and rocks by black ones. In large rivers, as the Elbe, &c. ſand-banks, by high tides and inundations, are liable to change places; care is therefore taken to ſhift the buoys from time to time, to ſhew the true channel of the river. An exact knowledge of the banks, their extent, and the depth of water on them, makes the moſt eſſential part of the ſcience of a pilot, and maſter of a ſhip; if the veſſel be large and draw much water, great attention will be neceſſary to keep clear of the banks; on the contrary, if it be ſmall, the ſame banks afford a ſure aſylum, where it may brave the largeſt and ſtouteſt veſſels, which dare not follow it here.

BANKER, one who traffics and negociates in money; who receives and remits money from place to place, by commiſſion from correſpondents, or by means of bills or letters of exchange. On account of ſome liberties which bankers have taken, of riſking in Exchange-Ally, the property of thoſe who have depoſited caſh with them, the public have not that confidence in them they lately had; it being cuſtomary now for merchants to lodge their large ſums in the bank, and only to keep their running caſh at bankers.

In Italy, the trade of a banker does not derogate from nobility; which is the reaſon why moſt of the younger ſons of the quality apply themſelves to that employment, in order to ſupport their families. The monied goldſmiths, in the reign of king Charles the Second, firſt acquired this name.

BANKING, the making of banks to oppoſe the force of the ſea, rivers, or the like, to ſecure the land from being over-flowed. With reſpect to the water which is to be kept out, this is called banking; with reſpect to the land, which is thereby to be defended, imbanking.

BANKING, in a ſalt-work, the raiſing a fence againſt the ſea, whereby its waters may be kept out, excepting ſo much as is neceſſary for the preparation of the ſalt.

BANKRUPT, a perſon that by trading hath gotten other perſons goods into his or her hands, and concealeth himſelf from his creditors. It is not buying or ſelling of lands, but of perſonal things, that will make a perſon liable to be a bankrupt; nor is it buying only, but both. Every one that gets his livelihood by buying and ſelling in trade, may come under a ſtate of bankruptcy upon his failing; but adventurers in the Eaſt-India company, members of the bank of England, or of the South-Sea company, ſhall not be adjudged bankrupts, in reſpect of their ſtock: alſo no perſon concerned as receiver-general of the taxes, &c. ſhall be a bankrupt. If a merchant gives over trade, and ſome years after becomes not ſolvent for money owed while a merchant, he is a bankrupt; but if for new debts continued on new ſecurity, it is otherwiſe.

BANKRUPTCY, the failure, abſconding, and relinquiſhing of traffic in a merchant, a banker, or other trader. See BANKRUPT.

BANN, or BAN, *Bannum*, or *Bannus*, in the feudal law, a ſolemn proclamation or publication of any thing. Hence the cuſtom of aſking, or bans, before marriage.

BANN *of the Empire*, an imperial proſcription, being a judicial puniſhment, wherewith ſuch as are acceſſary to diſturbing the public peace, are judged unworthy of the immunities and protection of the empire, and are out-lawed or baniſhed, &c.

BANNER, a ſquare flag, or the principal ſtandard belonging to a prince.

BANNERET, an ancient order of knights, or feudal lords, who poſſeſſing ſeveral large fees, led their vaſſals to battle under their own flag, when ſummoned thereto by the king. This order is certainly moſt honourable, as it never was conferred but upon ſome heroic action performed in the field. Anciently there being but two kinds of knights, great and little, the firſt were called bannerets, the ſecond batchelors; the firſt compoſed the upper, and the ſecond the middle nobility.

* BANOCKBURN, *Battle of*, June 25, 1314, where Edward II. was defeated by Robert de Brus. Edward II. having received intelligence that the Scots had made irruptions into England, where they burned Hexham, and ſeveral towns, and not only laid the country under contributions, but compelled the inhabitants to purchaſe a truce, on condition that they ſhould not for the future oppoſe the Scots at any time in their invaſions of England. The king was no ſooner apprized of theſe tranſactions, than he iſſued orders to the cinque ports, and maratime powers to equip their fleet, and be at Berwick on the day of rendezvous. He ſent the earl of Pembroke, as guardian of Scotland, to check the progreſs of the enemy in the northern countries: he wrote to the earl of Ulſter to raiſe the Iriſh chieftains, with their vaſſals, and bring them to his aſſiſtance: he ordered new levies to be made in Yorkſhire, and other parts of the kingdom, and aſſembled ſuch an army as England had never brought into the field upon any former occaſion. The king having kept his Eaſter at Ely, ſet out for York, and from thence proceeded to Berwick, which he reached about the beginning of June. As the time drew near for the ſurrender of Stirling, he began his march immediately for the relief of that fortreſs; and entered Scotland at the head of one hundred thouſand fighting men, attended by an incredible number of waggons and camp followers, ſo as to cover the whole face of the country. They marched without order, as to an aſſured victory, and had already parcelled out the lands of the vanquiſhed. They were ſuffered to advance without moleſtation from Robert de Brus, who had reſolved to hazard a battle; and for that purpoſe occupied an advatageous poſt in the neighbourhood of Stirling, where he did not doubt of being attacked by the Engliſh. His army conſiſted of thirty thouſand choſen men, trained up to war and hardſhip under his own eye and example, who were determined to conquer or die in defence of their king and country. With theſe he took poſt on a piece of ground bounded on one ſide by a moraſs, and on the other by an inacceſſible mountain; ſo that his flanks could not be attacked by the enemy's cavalry. A rivulet called Bannockburn ran in his front; and this he had rendered almoſt impaſſible, by digging holes in the bed of the channel, in which he fixed ſharpened ſtakes for the deſtruction of the Engliſh horſe. Large pits were likewiſe made between this rivulet and his camp, provided with the ſame inſtruments of anoyance, and artfully covered with turf and boughs to deceive the aggreſſors. As the van of Edward's army approached Stirling under command of the earls of Glouceſter and Hereford, Henry de Bohun, perceiving a body of Scots at the ſide of a wood, advanced againſt them with his Welſh followers, and was drawn into an ambuſh by Robert de Brus, who ſallied in perſon upon them from a thicket, and riding up to Bohun cleft his ſkull with a battle-axe. The Engliſh being reinforced by their rear, a ſharp diſpute enſued, in which the earl of Glouceſter was diſmounted, and the lord Clifford repulſed with conſiderable damage. As freſh ſupplies of men arrived from both armies, in all probability this conflict would have ended in a general engagement, had not night parted the combatants. The ſoldiers lay upon their arms, and they, as well as the horſes, were ſo fatigued with their march, and the want of repoſe, that the moſt experienced officers in the army propoſed to defer the attack until the people ſhould be refreſhed. This advice was rejected by the young nobility, who were eager to ſignalize their courage; and it was reſolved to give battle to the enemy in the morning. The troops were accordingly drawn up in order of battle; the wings, conſiſting of cavalry, being commanded by the earls of Glouceſter and Hereford; and the king in perſon taking his ſtation in the centre. Robert de Brus formed his army into three lines, and a body of reſerve, which was commanded by Douglas and the lord high ſteward of Scotland. As he had little confidence in his horſe, he ordered the troopers to diſmount: he placed his brother Edward at the head of the right wing, Randolph conducted the left, and he himſelf commanded the main body. When the Engliſh army was on

the point of charging, a diſpute aroſe about the poſt of honour, between the earls of Glouceſter and Hereford; and the former, impatient of controul, advanced immediately to the charge with great impetuoſity. But their career was ſoon ſtopped by the hidden pits and trenches, into which the horſes tumbled headlong, and were ſtaked in a miſerable manner. This unforeſeen diſaſter produced the utmoſt confuſion; and the Scots taking advantage of their diſorder, fell upon them ſword in hand, with ſuch fury that the greateſt part of them were cut in pieces. The earl of Glouceſter's horſe being killed, he fell to the ground, where he was immediately trodden to death; and Sir Giles de Argentain ſeeing him fall, ſprung forward to his reſcue: but that gallant officer was ſlain, together with Robert de Clifford, Payen de Tibetot, and William Mareſchall. While this havock was making in the right wing of the cavalry, the Engliſh archers advanced againſt the right wing of the enemy, and galled them ſo effectually with their arrows that they were upon the point of giving ground, when Douglas and the Steward, making a wheel with their body of reſerve, fell upon the flanks of the Engliſh, and routed them with great ſlaughter. Mean while the centre, commanded by Edward, moved on againſt the main body of the Scots, and met with a very warm reception from Robert de Brus, who fought in the front of the line with unequalled valour. The Engliſh were already diſpirited by the deſtruction of their wings, and the loſs of their braveſt officers, when the boys, and other followers of the Scottiſh camp, who viewed the battle from a neighbouring hill, perceiving the ſucceſs of Douglas and the Steward, began to ſhout aloud, and run towards the field for the ſake of plunder. The Engliſh, ſtartled at their acclamations, and ſeeing ſuch a multitude in motion, imagined they were ſuccours coming to reinforce the enemy; and on this ſuppoſition betook themſelves to flight with the utmoſt precipitation. Thoſe who attended the king hurried him off the field towards the caſtle of Stirling, into which, however the governor would not give him admittance, becauſe he was obliged by his capitulation to ſurrender the caſtle to the victor; ſo that Edward fled to Dunbar, where he was cordially received by Patrick earl of Marche, who had been always a faithful adherent to his family.

Meanwhile confuſion, rout, and conſternation, prevailed among the Engliſh forces; and victory declared for the Scottiſh king, who improved it to the beſt advantage. A great number of his enemies were ſlain upon the ſpot, as well as in the purſuit; and few or none would have eſcaped, had not his ſoldiers been ſo intent upon the booty, which is ſaid to have amounted in value to two hundred thouſand pounds. The earl of Hereford, with John Giffard, John de Wilyngton, the earl of Angus, the lords Mounthermer, Percy, Nevil, Scroope, Lucy, Acton, Latimer, Segrave, Berkley, Beaucamp, and other barons, to the number of five and twenty, were taken priſoners, together with a great multitude of bannerets and knights. The number of the ſlain amounted to about ſeven hundred lords, knights, and eſquires, and twenty thouſand common ſoldiers. Nor was the victory purchaſed without bloodſhead on the ſide of Brus, who loſt above four thouſand of his beſt men on the field of battle. Douglas was detached with four hundred cavalry to purſue Edward, who with great difficulty, reached the caſtle of Dunbar, in ſuch trepidation, that he made a vow to found a houſe in Oxford for four and twenty Carmelite divines, in caſe he ſhould eſcape the danger by which he was encompaſſed. As his purſuers ſtill hovered in the neighbourhood, he would not venture to proſecute his journey by land; but embarked on board of a ſmall veſſel, in which he was tranſported to Berwick, where he thought himſelf ſecure. Robert de Brus treated the priſoners with great humanity. He expreſſed unfeigned ſorrow for the death of Sir Giles de Argentein, to whoſe worth he was no ſtranger. The bodies of Glouceſter and lord Clifford were ſent to the king of England: the lord Mounthermer, as the ancient friend of Brus, was diſmiſſed without ranſom; the ſlain were decently interred, the wounded carefully attended; and the priſoners aſſured of liberty as ſoon as a reaſonable cartel could be eſtabliſhed. Robert's moderation was altogether admirable. Inſtead of proſecuting this victory by marching into England, while the whole kingdom was filled with terror and conſternation, he propoſed reaſonable conditions of peace to Edward; and commiſſioners were appointed by both princes to treat of an acaccommodation. The conferences were opened at Durham; but the Scottiſh deputies inſiſting, as a preliminary, upon the king's recognizing the title of Brus, and the independance of the Scottiſh crown, Edward refuſed to hear upon ſuch terms, and the negociation proved ineffectual.

BANQUET, in the manege, that ſmall part of the branch of a bridle that is under the eye.

BANQUET, or BANQUETTE, in fortification, a little foot-bank, or elevation of earth, forming a path, which runs along the inſide of a parapet, upon which the muſketeers get up in order to diſcover the counterſcarp, or to fire upon the enemy in the moat, or in the coverte way.

BANTAM-WORK, a kind of Indian painting, and carving on wood, reſembling Japan work, only decorated with a great variety of gaudy colours. Bantam-work is of leſs value among the connoiſſeurs, though ſometimes preferred, by the unſkilful, to the true Japan-work. Formerly it was in more uſe and eſteem than at preſent, and the imitation of it much practiſed by our japanners. There are two ſorts of Bantan, as well as of Japan-work; as, in the latter, ſome are flat, lying even with the black, and others high and emboſſed: ſo, in Bantam-work, ſome are flat and others incut, or carved into the wood, as we find in many large ſcreens; with this difference, that the Japan artiſts work chiefly in gold and other metals, and thoſe of Bantam generally in colours, with a ſmall ſprinkling of gold here and there: for the flat Bantam-work is done in colours, mixed with gum-water, proper for the thing deſigned to be imitated.

BAPTISM, in theology, a ſacrament whereby a perſon is admitted into the Chriſtian church. Grotius imagines the rite of baptiſm had its original from the time of the deluge; immediately after which he thinks it was inſtituted in memory of the world having been purged by water. Some learned men think it was added to circumciſion, ſoon after the Samaritan ſchiſm, as a mark of diſtinction to the orthodox Jews. Spencer, who is fond of deriving the rites of the Jewiſh religion from the ceremonies of the Pagans, lays it down as a probable ſuppoſition, that the Jews received the baptiſm of proſelytes from the neighbouring nations, who were wont to prepare candidates for the more ſacred functions of their religion by a ſolemn ablution; that, by this affinity of ſacred rites, they might draw the Gentiles to embrace their religion, and the proſelytes (in gaining of whom they were extremely diligent) might the more eaſily comply with the tranſition from Gentiliſm to Judaiſm. It is to be obſerved, under this head of Jewiſh baptiſm, that the proſelyte was not to be baptiſed, till the wound of circumciſion was perfectly healed: that then the ceremony was performed by plunging him into ſome large, natural, receptacle of water; and that baptiſm was never after repeated in the ſame perſon, or in any of his poſterity, who derived their legal purity from the baptiſm of their anceſtor. In the primitive Chriſtian church, the office of baptiſing was veſted principally in the biſhops, and prieſts, or paſtors of the reſpective pariſhes: but, with the conſent of the biſhop, it was allowed to the deacons, and, in caſes of neceſſity, even to laymen to baptize; but, never, under any neceſſity whatever, was it permitted to women to perform this office. Nor was it enough, that baptiſm was conferred by a perſon, called to the miniſtry, unleſs he was alſo arthodox in the faith. This became matter of great buſtle in the church; and hence aroſe the famous controverſy between Cyprian, and Stephen biſhop of Rome, concerning the re-baptizing thoſe who had been baptiſed by heretics, Cyprian aſſerting that they ought to be re-baptiſed, and Stephen maintaining the contrary opinion.

The perſons baptiſed were either infants, or adults. To prove that infants were admitted to the ſacrament of baptiſm, we need only uſe this argument; none were admitted to the euchariſt till they had received baptiſm: but in the primitive church, children received the ſacrament of the Lord's-ſupper, as appears from what Cyprian relates concerning a ſucking child, who ſo violently refuſed to taſte the ſacramental wine, that the deacon was obliged forcibly to open her lips, and pour it down her throat. We might add the teſtimonies of Irenæus and Cyprian; but it will be ſufficient to mention the determination of an African ſynod, held A. D. 254, at which were preſent ſixty-ſix biſhops, who unanimouſly decreed, that the baptiſm of children was not to be deferred long, but that the grace of God, or baptiſm, ſhould be given to all, and moſt eſpecially unto infants. As for the time, or ſeaſon, at which baptiſm, was uſually adminiſtred, we find it to have been reſtrained to the two ſolemn feſtivals of the year; Eaſter and Whitſuntide: but it is to be obſerved, that theſe ſtated returns of the time of baptiſm related only to perſons in health: in other caſes, ſuch as ſickneſs, or any preſſing neceſſity, the time of baptiſm was regulated by occaſion and opportunity.

The place of baptiſm was at firſt unlimited; being ſome pond or lake, ſome ſpring or river, but always as near as poſſible to the place of public worſhip. Afterwards they had their baptiſteries, or, as we call them, fonts, built at firſt near the church, then in the church-porch, and at laſt in the church itſelf. There were many in thoſe days who were deſirous to be baptiſed in the river Jordan, out of reverence to the place where our Saviour himſelf had been baptiſed.

The perſon to be baptiſed, if an adult, was firſt examined by the biſhop, or officiating prieſt, who put ſome queſtions to him; as firſt, whether he abjured the devil and all his works; ſecondly, whether he gave a firm aſſent to all the articles of the Chriſtian faith: to both which he anſwered in the affirmative. Whether the uſe of ſponſors was as old as the Apoſtles days, is uncertain: perhaps it was not, ſince Juſtin Martyr, ſpeaking of the method and form of baptiſm, ſays not a word of them.

BAPTISMAL, belonging or relating to baptiſm; as baptiſmal vow, fonts, preſents, &c.

BAPTISTS, in church hiſtory, the name by which the anabaptiſts love to diſtinguiſh themſelves.

BAPTISTERY, the place in which the ceremony of baptiſm was anciently performed. The baptiſteries were very large and capacious, becauſe the ſtated times of baptiſm returning but ſeldom, there were uſually great multitudes to be baptized at the ſame time. Anciently there was but one baptiſtery in a city, and that at the biſhop's church. At Piſa, Bononia, Orvieto, Parma, and even at Florence itſelf, they are ſaid to have but one baptiſtery and font for the whole city at this day. In length of time, baptiſteries were ſet up in country pariſhes, with the ſpecial allowance however of the biſhop.

BAR, in a general ſenſe, a ſlender piece of wood or iron for keeping things cloſe together.

BAR, in courts of juſtice, an incloſure, where the counſel are placed to plead cauſes. It is alſo applied to the benches where the lawyers or advocates are ſeated, becauſe anciently there was a bar to ſeparate the pleaders from the attorneys and others. Hence our lawyers, who are called to the bar, or licenſed to plead, are termed barriſters.

BAR, in law, plea of a defendant which is ſaid to be ſufficient to deſtroy the plaintiff's action.

BAR, in heraldry, an ordinary reſembling the feſs, but much ſmaller. It differs from the feſs only in its narrowneſs. The feſs is alſo confined to a ſingle place, whereas the bar may be placed in any part of the ſhield.

BAR, in horſemanſhip, the higheſt part of a horſe's mouth, between the grinders and tuſhes.

BAR, in muſic, a ſtroke drawn perpendicularly acroſs the lines of a piece of muſic, including, between every two bars, a certain quantity, or meaſure of time, which is different, according as the muſic is either triple or common. In the former the meaſure of three crotchets is included, in the latter four. The principal uſe of bars is to regulate the beating of time.

BAR, in hydrography, a bank of ſand, gravel, &c. lying before the mouth of a river, harbour, &c. which obſtructs the paſſage, and ſometimes prevents the navigation.

BAR-SHOT. See SHOT.

BARACKS. See BARRACKS.

BARALIPTON, among logicians, the firſt indirect mode of the firſt figure of ſyllogiſm.

BARBACAN, or BARBICAN, the outer wall, or exterior defence of a city or fortreſs.

BARBACAN is alſo a fort at the entrance of a bridge, or in the out-let of a city, having a double wall with towers. It alſo denotes an aperture made in the walls of a fortreſs, to fire through upon the enemy.

BARBACAN, in architecture, a canal or opening left in the wall, to give room for the water to run in and out, when buildings are erected in places liable to be overflowed, &c.

* BARBADOES, an iſland, the eaſtermoſt of the windward iſlands of North America. It is thirty-two miles in length, and twenty-two in breadth. The air is very hot, and would be much more ſo, were it not for the trade-wind, which conſtantly blows from the eaſt, except there chance to be a hurricane in July and Auguſt; but this they are not much ſubject

to. It is a plain country, and the land was very fertile, but it is no wonder that length of time ſhould begin to wear it out for want of manure. The fields are always green. The iſland produces ſugars, indigo, cotton-wool, ginger, and rum. Their fruits are oranges, ananas, or pine apples, citrons, limes, guavas, plantains, &c. It alſo produces a kind of petrolæum called Barbadoes tar, which riſes out of the earth, and is of great uſe in medicine. Barbadoes has about twenty thouſand white inhabitants, and one hundred thouſand negroes. They receive moſt of their corn, cattle, fleſh, and ſalted fiſh, from the northern colonies, and their clothes and furniture from England. There are but few trees in this iſland. The capital is Bridge-Town.

BARBARA, in logic, is a name given by the ſchoolmen to the firſt mode of the firſt figure of ſyllogyſms.

BARBARISM, in grammar, an offence againſt the purity of ſtyle or language; or a coarſe expreſſion, not uſed by polite authors.

* BARBARY, a large country of Africa, bounded on the eaſt by Egypt, on the weſt by the Atlantic Ocean, on the ſouth by Mount Alas, and the Deſert of Barca, and on the north by the Mediterranean Sea. It is about two thouſand miles long, and ſeven hundred and twenty broad, in ſome parts. It is ſituated between ſeven and forty-four degrees of longitude, and twenty-five and thirty-ſeven degrees of latitude. This country, is the fineſt in the north part of Africa, for the ſoil is fertile, and produces all the fruits which grow in Spain, Italy, and the ſouth of France. It alſo produces a great quantity of dates, Indian corn, and cotton. The ſheep have large tails, generally weighing twenty-five pounds each. Their horſes, called Barbs, are greatly admired for their beauty and ſtrength. They have a great number of camels, and ſome elephants; alſo lions, leopards, tygers, panthers, buffaloes, and monkies. They export barbs, cotton, and linen cloth, corn, dried fruit, figs, raiſins, dates, Turky and Morocco leather, and coral. The principal rivers are the Ghir, the Ziz, and the Dras. The chief mountains are the Atlas, which gives its name to the Atlantic or Weſtern Ocean, and runs parallel to the coaſt at ſome diſtance, the whole length of Barbary. Barbary is divided into four ſtates, Morocco, Algiers, Tunis, and Tripoli, which lie along the Mediterranean Sea, and the Ocean, from weſt to eaſt. The original inhabitants of Barbary are the Moors, who dwell chiefly in Morocco and about Mount Atlas. In the firſt century after Mahommed, the Arabs over-ran all Barbary, and now inhabit the plains. Another ſort of inhabitants are the Turks, who, in the ſixteenth century, made themſelves maſters of the coaſts and towns of Algiers, Tunis, and Tripoli. The languages ſpoken here are the Mooriſh; the Arabic ſpoken by the Arabs; the Turkiſh by the Turks; the Gemic, or Lingua Franca, is ſpoken on the coaſts. Morocco has princes of its own, of the race of Mahommed; hence they are called ſharif, or noble, and they prefix the title of muley to their name: we call them emperors. Algiers is governed by a prince called the dey, under whom each of the provinces is governed by a bey, which is the title of the ſovereigns of Tripoli and Tunis. Theſe laſt three may be ſaid to be republics of ſoldiers, under the government of the Turks.

* BARBARY (the deſart of) is bounded on the north by Barbary, on the eaſt by part of Egypt and Nubia, on the ſouth by Negroland and Guinea, and on the weſt by the Weſtern Ocean. It is ſeated between thirty minutes, and forty-five degrees thirty minutes of longitude, and between fifteen and twenty-ſeven degrees of latitude; it is two thouſand five hundred and twenty miles long from weſt to eaſt, and ſeven hundred and twenty broad from north to ſouth in ſome parts. This deſart is barren, ſandy, and hot, but agrees well enough with the natives, though the caravans are often reduced to great extremities in croſſing this country to and from Negroland. There are few rivers or mountains of note; the moſt remarkable are the mountains along the ſea-coaſt, and the river St. Antony, which falls into the ocean to the ſouth of cape Blanco. The country is divided into five parts, on account of the different tribes that inhabit it, Sanhaga, Swenziga, Twarga, Lamptun, Berdoa, and Levata, lie one after another from weſt to eaſt. The people have no rule nor legal form of government; their dreſs is a piece of coarſe cloth, which covers a ſmall part of their bodies; they have a ſmall turban of black cloth on their heads, and their principal men wear a ſhort gown of blue cotton, which reaches down to their knees, with wide ſleeves; they ride on dromedaries or camels, between the two boſſes, or between the boſs and the neck; they uſe no ſtirrups nor ſpurs, but prick

the beaſt with a goad; the dromedaries uſed for riding have the griſtles of their noſes bored, through which they run a leathern ſtrap, and uſe it inſtead of a bridle. Inſtead of beds, they have mats made of reeds and canes; and their tents are of cloth made with camel's-hair, or fibres of the date-tree; they have no bread, nor any kind of grain, but are nouriſhed chiefly with camel's-milk in the morning; and at night they eat fleſh, when they can get it boiled in milk; they have no plates, trenchers, knives, nor forks, but take a piece in their hand, and eat it like a piece of bread; they eat the broth in the hollow of their hands inſtead of ſpoons; while they have milk, they can ſhift without water, which they ſometimes do for ſeveral weeks together, when water is hard to come at; the camels alſo live without water, when they have no graſs to feed on. The men ſpend there whole time in hunting and robbing, and ſtay but a few days in a place, that is, while the graſs laſts.

BARBE, a name uſually given to a Barbary horſe.

BARBE, in the military art, a term applied to the firing of cannon. To fire in barbe is to fire over the parapet, inſtead of firing through the embraſures. The parapet muſt not be above three feet and a half high, otherwiſe it will be impoſſible to fire in this manner.

BARBE, among our anceſtors, the armour of a knight's horſe.

BARBEL, *Barbus*, a river fiſh, ſo called from its having a barb or beard under its noſe.

BARBERY, in botany; ſee BARBERIS.

BARBLES, or BARBS, in farriery, ſmall excreſcences under the tongue, and which may be diſcovered by drawing it aſide, and cured by cutting them cloſe off, and waſhing the part with brandy, or ſalt and water.

BARCALAO, a ſpecies of cod caught in ſeveral parts of the South-ſea, particularly on the coaſt of the iſland of Juan Fernandes.

* BARCELONA, a city of Spain, and the capital of Catalonia. It is ſurrounded with a good brick-wall, round which is another, with fourteen baſtions, horn-works, ramparts, and ditches; the ramparts are high, broad, and ſpacious, inſomuch that an hundred coaches may be ſeen every evening driving thereon for pleaſure. It is the reſidence of a viceroy, is a biſhop's ſee, has a fine univerſity, a mint, a good port, and is adorned with handſome buildings. The remarkable buildings are the cathedral, which is large and handſome, and adorned with two high towers, the church of the Virgin Mary, the palace of the biſhop, that of the inquiſition, and ſeveral religious houſes; add to theſe the palace of the viceroy; the arſenal, which contains arms for a thouſand men; the exchange, where the merchants meet; the terſana, where they build the gallies; the palace where the nobility of the country meet, called La Caſa de la Deputation. There are ſeveral fine ſquares, particularly that of St. Michael, into which all the great ſtreets run. The port is wide, ſpacious, deep, and ſafe, defended on the one ſide by a great mole, and on the other ſheltered from the weſt wind by two mountains, that advance into the ſea, and form a kind of promontory; the mole is ſeven hundred and fifty paces long, with a quay, at the end of which is a light-houſe, and a ſmall fort.

Barcelona is a place of great trade, on account of the conveniency of its harbour. The inhabitants are diligent, and equally fit for labour and trade; they are alſo very civil to ſtrangers. The women are well ſhaped, and as handſome as any in Spain.

Barcelona is three hundred miles eaſt from Madrid, one hundred and forty eaſt of Saragoſſa, one hundred and eighty north-eaſt of Valencia. Long. 25. E. Lat. 41. 26. N.

BARD, a poet among the ancient Gauls and Britons, who ſung the praiſes of heroes, to recommend virtue, and compoſe the diſſentions among mankind. They had their name from their office of chanting hymns, which were accompanied with muſical inſtruments, and conſidered as the dictates of their gods; ſo that it is no wonder they were held in the higheſt eſteem.

BARDANA *Major*, burdock or clotbur, in botany, a biennial plant, common by road ſides, ſufficiently known by its ſcaly heads or burs. Theſe roots are recommended as mild diuretics, diaphoretics, and ſweeteners, in ſcorbutic, rheumatic, gouty, and venereal diſorders; and are ſuppoſed to be of ſimilar or ſuperior virtue to china-root and ſarſaparilla, to which, in their ſenſible qualities, they have a conſiderable reſemblance. They are uſed chiefly, and to the beſt advantage, in the form of a decoction: two ounces of the dried root are boiled in three pints of water, till one pint is waſted, and a pint or more of the ſtrained liquor taken warm every day. The expreſſed juice of the leaves has been ſometimes given to the quantity of a quater of a pint or more, in the ſame intentions.

The ſeeds alſo have been given, in doſes of a dram, as a diuretic, and as an aperient in diſorders of the breaſt.

BARGAIN, in commerce, a contract or agreement in buying and ſelling. Bargain and ſale in law, a contract made of manors, lands, and other things, transferring the property thereof for a conſideration in money.

BARGE, a kind of boat of ſtate, furniſhed with elegant apartments, canopies and cuſhions, equipped with a band of rowers, and adorned with flags and ſtreamers: they are generally uſed for proceſſions on the water, by noblemen, officers of ſtate, or magiſtrates of great cities: of this ſort we may reaſonably ſuppoſe the famous galley of Cleopatra. There are likewiſe others of a ſmaller kind for admirals and captains of the royal navy, calculated to be eaſily hoiſted into and out of the ſhips to which they belong. Barges are alſo flat-bottomed veſſels of burthen for lading and diſcharging ſhips, and removing their cargoes in a habour. See LIGHTER, KEEL.

BARGE-COUPLES, in architecture, a beam mortiſed into another, to ſtrengthen the building.

BARILLA, a ſpecies of pot-aſh, ſometimes called ſoda, and prepared in Spain from a plant called kali. See KALI.

BARKING *of Trees*, in agriculture, the taking away part of the earth about the roots, that the rain and ſnow water, during the winter, may penetrate further into them. This operation is generally performed in the autumn.

BARK, *Cortex*, the exterior part of trees. The bark of the oak has been long uſed in tanning leather, and thought eſſential to that operation; but a different ſubſtance has been lately diſcovered, which anſwers the purpoſe full as well, and may be procured at a much cheaper rate; we mean oak ſaw-duſt, or the chips of oak reduced to powder. This valuable ſecret was lately purchaſed by the ſociety for the encouragement of arts, &c. See TANNING.

Jeſuits BARK. See QUINQUINA.

BARK, in naval affairs, a general name given to ſmall ſhips: alſo a ſhip of three maſts, without any mizen-top maſt: likewiſe a name to diſtinguiſh a veſſel with a broad ſtern, without any figure on the prow or ſtern.

BARKING *of Trees*, the peeling off the rind or bark.

It is neceſſary, in our climate, to perform this operation in the month of May; becauſe, at that ſeaſon only, the bark is, by the great quantity of ſap, ſeparated from the wood.

BARLEY, *Hordeum*, a gramineous, frumentaceous plant, whoſe ſeeds are covered with a huſk growing in a ſpike, and the grains bearded.

Cultivation of BARLEY. Some perſons ſow barley upon land where wheat grew the former year; but, when this is practiſed, the ground ſhould be ploughed the beginning of October, in a dry time, laying it in ſmall ridges, that the froſt may mellow it the better; and this will improve the land greatly: then, in March, the ground is ploughed again, and laid even, where it is not very wet; but in ſtrong wet lands the ground ſhould be laid round, and the furrows made deep to receive the wet. When this is finiſhed, the ſeed ſhould be ſown with a broad caſt, at two ſowings; the firſt being harrowed in once, the ſecond ſhould be harrowed until the ſeed is buried. The common allowance of ſeed is four buſhels to an acre.

Farmers in general ſow too much grain of all ſorts on their land; not conſidering that, if the roots of corn ſtand very cloſe together, there will not be room for them to put out many ſtems; ſo that frequently there is not more than two or three ſtalks to a root; whereas, if the roots were farther diſtant, there might be ten, twelve, or more. We have counted upwards of ſeventy ſtalks of barley from one root, which was tranſplanted in a garden, where the ground was light but not rich: and are ſatisfied, by ſeveral experiments, that, where barley is ſown early upon light ground, it ſhould not be too thick; for, if it is rolled two or three times before it ſtalks, the roots, by being preſſed, will ſhoot out a great number of ſtalks; and it will not be ſo liable to lodge with wet, as the barley which is ſown thick; ſo muſt conſequently be drawn up much taller, and have weaker ſtalks. When the barley is ſown, the ground ſhould be rolled after the firſt ſhower of rain, to break the clods, and lay the earth ſmooth, which will render it better to mow, and cauſe the earth to lie cloſer to the roots of the corn, which will be of great ſervice to it in dry weather. Where barley is ſown upon new broken up-land, it is uſual to plough up the land in March and let it lie fallow until June ; at which time it is ploughed again, and ſown with turnips, which are eaten by ſheep in winter; by whoſe dung the land is greatly improved ; and then in March following the ground is ploughed again, and ſown with barley as before.

Many people ſow clover with their barley ; and ſome have ſown the lucern with barley ; but neither of theſe methods is to be commended ; for, where there is a good crop of barley, the clover or lucern muſt be ſo weak as not to pay for ſtanding. The time for cutting of barley is when the red colour of the ears is off, and the ſtraw turns yellow, and the ears begin to hang down. In the north of England they reap their barley, and make it up in ſheaves ; by which method they do not loſe near ſo much corn ; and it is alſo more handy to ſtack : but this method cannot ſo well be practiſed where there are many weeds amongſt the corn, which is too frequently the caſe in the rich lands near London ; therefore, when this is the caſe, the barley muſt lie on the ſwarth till all the weeds are dead : but, as it is apt to ſprout in wet weather, it muſt be ſhook up, and turned every fair day, after rain, to prevent it. When it is carried, it ſhould be thoroughly dry ; otherwiſe, if it be ſtacked wet, it will turn muſty ; or if too green, it is ſubject to burn in the mow. The common produce of barley is two and an half, or three quarters, on an acre ; but ſometimes there have been known four quarters on an acre.

BARLEY-CORN, the leaſt long-meaſure known in England, equal to one third of an inch.

BARNICLE, or ſoland gooſe, in natural hiſtory, a ſpecies of gooſe with a black beak, which is much ſhorter than that of the common gooſe. It is common in the north of Scotland.

BARNICLE, a ſpecies of ſhell-fiſh, often found ſticking to the bottoms of ſhips, rocks, &c.

BARNICLES, among farriers, an inſtrument compoſed of two branches. It is put upon the noſe of a horſe, when he will not otherwiſe ſtand quiet to be ſhod, blooded, or dreſſed.

* BARNSTAPLE, a corporation and ſea port-town, in Devonſhire, with a market on Friday. It is governed by a mayor, a recorder, twelve aldermen, and twelve burgeſſes, and ſends two members to parliament. It is a neat populous town, and is ſeated on the river Taw, between hills, in the form of a ſemi-circle. On the ſouth ſide there is a handſome ſtone bridge, of ſeventeen arches, and on the north the ruins of a caſtle. It is thirty-nine miles north of Exeter, and an hundred and ninety-four weſt of London. The living is a diſcharged vicarage of forty-ſeven pounds a year. Long. 4.5.W. Lat. 51.15.N.

BAROCO, in logic, the fourth mode of the ſecond figure of ſyllogiſms.

A ſyllogiſm in baroco has the firſt propoſition univerſal and affirmative : but the ſecond and third, particular and negative; while the middle term is the predicate in the two firſt propoſitions.

BAROMETER, an inſtrument to meaſure the weight of the atmoſphere, and the variations that happen therein, in order to indicate the changes of the weather.

As the air is an heterogeneous fluid, it will vary in its weight as its component parts are different ; and alſo according to its different altitudes. Few bodies are lighter than water, which is alſo very eaſily rarified into vapour. Hence it follows, that when the air is filled with aqueous particles it will be lighteſt, as we generally find it is in moiſt rainy weather ; and alſo that it will be oftener in this than in a heavier ſtate. Some inſtrument therefore is neceſſary to indicate theſe changes, and ſhew the weight of the air at all ſeaſons ; and may be made in the following manner :

A glaſs tube, hermetically ſealed at one end, is to be filled with quickſilver, well defecated and purged of its air. The finger being then placed on the open end, in immediate contract with the mercury, ſo as not to admit the leaſt particle of air, the tube is inverted and carefully immerſed, with the finger on the open end, into a baſon of the ſame prepared mercury ; then, upon removing the finger, the mercury in the baſon will join that in the tube ; and the column of mercury in the latter will immediately ſubſide to a certain pitch, or altitude, provided the tube be above thirty-one inches long.

Let A B (plate IX. *fig.* 1.) be ſuch a tube, thirty-four inches in length, and a quarter of an inch in diameter, hermetically ſealed at A, and open at B ; let C D be the baſon of mercury, into which the tube is immerſed in an inverted poſition ; E F, the ſurface of the mercury in the baſon, and G H, that in the tube. Now it is very eaſy to conceive that if this whole apparatus were in vacuo, all the mercury in the tube would, as ſoon as inverted and the finger taken away, deſcend into the baſon ; becauſe it muſt, as being a heavy body, deſcend towards the center of

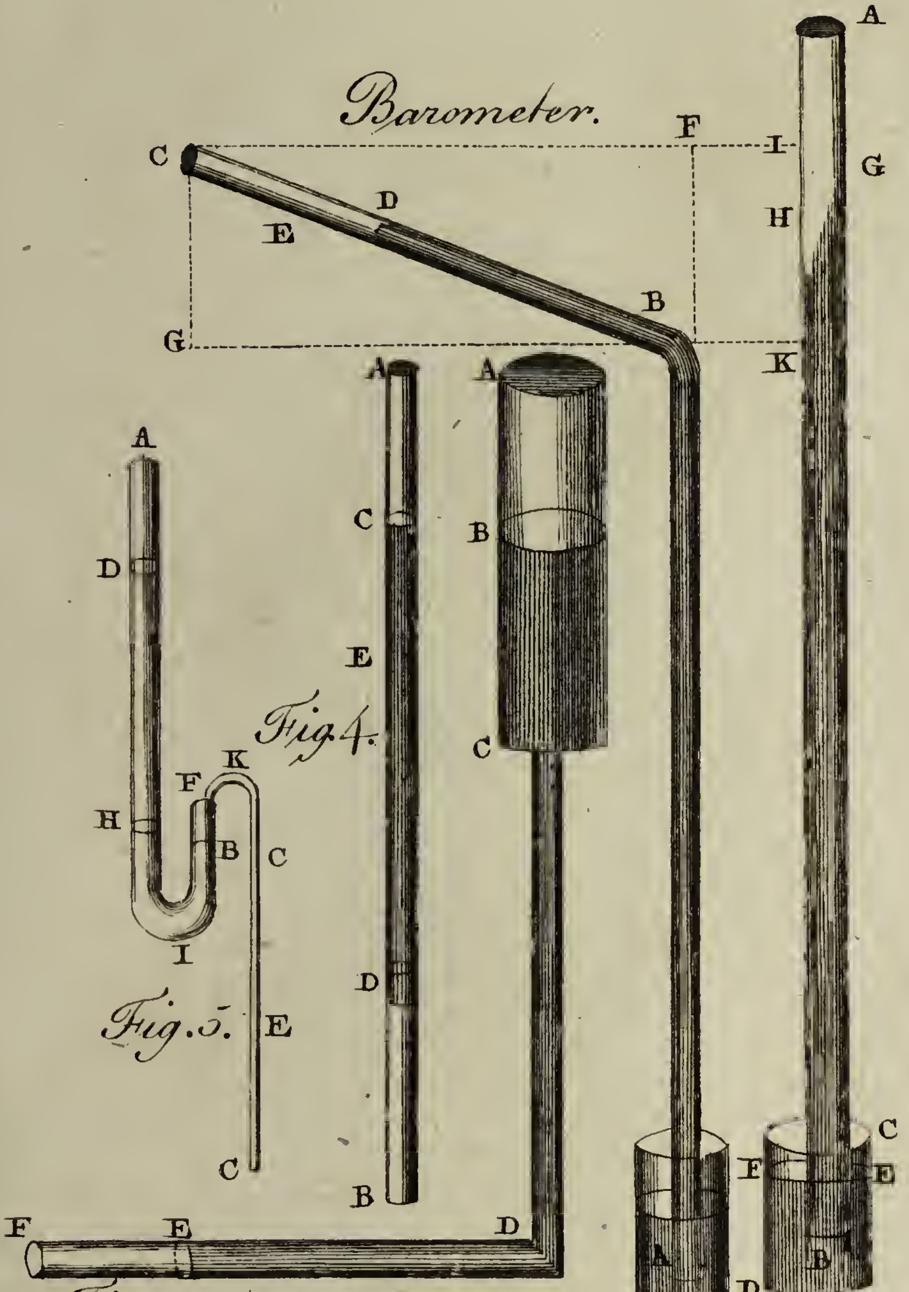
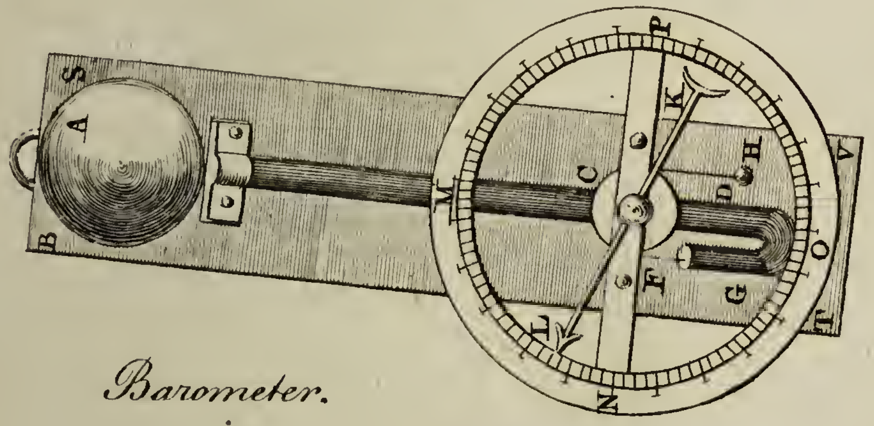


Fig. 4.

Fig. 5.

Fig. 3.

Fig. 2. Fig. 1.



Barometer.

Fig. 6.

of the earth, till it meets with ſuch an obſtacle as the baſon to obſtruct its motion, and ſupport it. But ſince the mercury does not totally ſubſide when this is done in the open air, it follows that the column remaining in the tube muſt be ſuſpended by the gravity of the air preſſing on the ſurface of the mercury in the baſon. And ſince the mercury in the baſon is in equilibrio with that in the tube, it is plain, that the weight of the mercury in the tube, and the weight of the air upon every circular area of the ſurface of the mercury in the baſon, equal to the orifice of the tube, muſt be equal: conſequently the weight of the column of mercury, in the tube, is equal to the weight of a column of air of the ſame baſe, and whoſe altitude is equal to that of the atmoſphere; conſequently this column of mercury will always ſhew the gravity of the air by its riſe and fall in the tube, and indicate the various changes that happen in the atmoſphere.

Since this ſuſpended column of mercury exactly indicates the gravity of the air at all times, philoſphers have watched its various ſtations with the greateſt attention, in order to diſcover the two extremes of the air's gravity, by obſerving the leaſt and greateſt altitude of this mercurial column, which long experience has at laſt ſhewn to be nearly 28 and 31 inches; the mercury very rarely falling below the former, or riſing above the latter: whence 29 inches and a half is fixed upon as the mean altitude, expreſſing the mean gravity of the air, and may therefore be repreſented by B I; let the greateſt altitude be B I, and the leaſt B K; then will H I, the diſtance between them, be what is called the ſcale of variation.

This ſcale or diſtance being three inches in the perpendicular tube; and it being known that fluids will always have the ſame altitude in a tube of any form or inclination; various artiſts have contrived various methods to increaſe the motion of the mercury, by making it move over a large ſpace; and thus have invented ſeveral different ſorts of barometers.

That which is next the upright one, is moſt eſteemed, is called the diagonal barometer, and is repreſented in *fig.* 2. where ABC is a tube hermetically ſealed at C, and immerſed in a baſon of mercury at A. This tube is perpendicular as from A to B, where the ſcale of variation begins; but is there bent into the form BC, making an acute angle F B C. This part BC extends to the higheſt limit in the ſcale of variation, viz. I C; and conſequently while the mercury riſes from K to I, in the common barometer, it will move in this form B to C, enlarging the ſcale of variation in the proportion of BC to F B; that is, of the diagonal to the leaſt ſide of a parallelogram.

But this barometer is attended with one great inconvenience, which leſſens its utility. Quickſilver being a very heavy body, and ſupported on the part B C, forming an inclined plane, it muſt have a very conſiderable degree of friction, which will be increaſed in proportion as the part BC is more oblique; and conſequently the very ſmall and nice variation of the air's preſſure cannot be ſo accurately indicated in this, as in the common form. It alſo very often happens, from the inclination of the part BC, that the quickſilver divides into ſeveral parts, and thence frequently requires the trouble of re-filling the tube. This barometer was invented by Sir Samuel Moreland.

M. Caſſini invented another kind of barometer, in order to enlarge the ſcale of variation; an invention which was afterwards compleated by M. John Bernoulli. It conſiſts of a tube A C D F, (*fig.* 3.) hermetically ſealed at A, and bent to a right angle at D; whence it has acquired the name of the horizontal rectangular barometer. The mercury ſtands in both the legs from E to B; the ſcale of variation from A to C is made in a larger part; and it is evident, that in moving three inches from A to C, it will move through ſo many times three inches in the ſmall leg D F, as the bore of D F is leſs than the bore of A C; whence the motion of the mercury at E muſt be extremely ſenſible. But the inconvenience here too is, that the mercury is very apt to break off in the leg E, and alſo to run out at the end E. Here is alſo a great degree of friction, and at the ſame time the attraction of coheſion will, from the ſmallneſs of the bore D F, impede the free motion of the mercury.

The pendant barometer is made in another form, conſiſting of a ſingle tube ſuſpended by a ſtring faſtened to the end A (*fig.* 4.) This tube is of a conical or tapering form, the end A being a little leſs than that at B. It is hermetically ſealed at A, and filled with mercury: then will the mercury ſink to its common ſtation, and admit a length of altitude C D, the ſame with that in the common barometers. But from the conical bore of the tube, the mercury will deſcend as the air grows lighter, till it reaches its loweſt altitude, when the mercury will ſtand from the loweſt part of the tube B to E; ſo that B E will equal 28 inches: conſequently the mercury will, in ſuch a tube, move from A to E, or 32 inches if the tube be five feet, or 60 inches long; and therefore the ſcale A E is here above ten times greater than in the common barometer: but the fault of this barometer is, that the tube being of a very ſmall bore, the attraction of coheſion will be very conſiderable, and prove an impediment to that freedom of motion, neceſſary to ſhew a very ſmall variation in the air's weight.

The wheel barometer, ſo called from its ſtructure, is eaſily underſtood from the figure, where ACDG (plate IX. *fig.* 6.) repreſents the quickſilver in a glaſs tube, having a large round head, or baſs at top, and turded up at the bottom F. Upon the ſurface of the mercury in the bent leg, there is placed an iron ball G with a ſtring going over a pulley C D, and balanced by another weight H, ſuſpended freely in the air. As the ſurface of the mercury at A is very large, and that at G very ſmall, the motion of the quickſilver, and conſequently of the ball G, will at the bottom be very conſiderable; but as the weight G moves up and down, it turns the pulley C D, and that a hand or index K L, pointing to the diviſions of a large graduated circle MNOP; by which means the minuteſt variations of the air are plainly indicated, provided the inſtrument be ſo accurately made that the friction of the ſeveral parts be inconſiderable. This is the invention of Dr. Hooke.

Mr. Rowning invented a kind of compound barometer, conſiſting of mercury and water. ABC (plate IX. *fig.* 5.) is a compound tube hermetically ſealed at A, and open at C, empty from A to D, filled with mercury from thence to B, and from thence to E with water. Let G B H be a horizontal line, then it is plain from the nature of the ſyphon, that all the compound fluid contained in the part from H to G, will be always in equilibrio with itſelf, be the weight of the air what it will, becauſe the preſſure at H and G muſt be equal: Whence it is evident, that the column of mercury D H, is in equilibrio with the column of water G E, and a column of air of the ſame baſe conjointly, and will therefore vary with the ſum of the variations of each of theſe. The great property of this barometer is, that the ſcale of variation may be increaſed *ad infinitum*. But notwithſtanding this property, it will afford the theoriſt more pleaſure than the practical artiſt.

We have already hinted that the common barometer is the beſt inſtrument yet known for meaſuring the gravity of the air: but, in order to its doing this to the greateſt perfection, the following particulars are neceſſary to be obſerved. 1. The tube muſt be at leaſt one quarter of an inch in diameter; one third of an inch is a very proper ſize. 2. The tube ought to be new, clean, and dry within when filled; and in order to this it ſhould be hermetically ſealed at both ends, when made at the glaſs-houſe, one end of which may be cut off with a file, when you intend to uſe it. 3. The diameter of the ciſtern that holds the mercury, in which the open end of the tube is immerſed, ſhould be as large as conveniently may be, that the mercury therein may have nearly at all times the ſame degree of altitude, otherwiſe the index will not be true. 4. The mercury muſt be very pure, and free from any mixture of tin, lead, or other metal. 5. It ought to be purged entirely from air, as it may be by boiling, and filling the tube with it, while nearly boiling hot. 6. The tube muſt be heated before it is filled, to prevent its breaking with the boiling mercury. 7. It ſhould be rubbed very hard, to excite the electric virtue, which will expel the particles of the air from the internal ſurface. 8. There ought to be a nonius, or vernier, applied to the index of the graduated plate, for meaſuring more accurately the riſe and fall of the mercury.

As the principal uſe of the barometer is to eſtimate the gravity of the air at different times, in order to foreſee the alterations of the weather, it will be proper here to add the following particulars relating to the riſe and fall of the mercury, as they are the reſult of careful and repeated obſervations.

1. The riſing of the mercury preſages in general fair weather, and its falling the contrary. 2. In very hot weather, the falling of the mercury indicates thunder. 3. In winter the riſing preſages froſt; but in a continual froſt, it indicates ſnow. 4. When foul weather happens immediately after the falling of the mercury, little of it is to be expected; and ſo on the contrary of fair weather. 5. But when the mercury continues to riſe for ſome time before the foul weather is over, a continuance of fair may be expected to follow. 6. In fair weather, when the mercury continues to fal

fall before the rains come on, it preſages a great deal of wet, and probably high winds. 7. The unſettled motion of the mercury denotes uncertain and changeable weather.

From theſe obſervations, it appears, that it is not ſo much the height of the mercury in the tube that indicates the weather, as the motion of it up and down; in order therefore to know whether the mercury be actually riſing or falling, the following obſervations may be of uſe. 1. If the ſurface of the mercury be convex, it is a ſign that the mercury is then riſing. 2. If the ſurface be concave, that it is ſinking. 3. If the ſurface be plain, or rather a little convex, the mercury is ſtationary. 4. If the tube be ſmall, ſhake the tube, and if the air be growing heavier, the mercury will riſe about half the tenth of an inch; if it be growing lighter, it will ſink as much.

BARON, the next degree of nobility below a viſcount and above a baronet.

BARONS *of the Exchequer*, the four judges to whom the adminiſtration of juſtice is committed, in matters relating to the revenue of the crown.

BARONS *of the Cinque Ports*, members of the houſe of commons ſent by the Cinque ports.

BARON AND FEME, a term in law to ſignify the huſband in relation to his wife, who is called feme. They are conſidered only as one perſon, ſo that a huſband cannot be witneſs for or againſt his wife, nor the wife for or againſt her huſband, except in caſes of high treaſon.

BARON AND FEME, in heraldry, is when the coats of arms of a perſon and his wife are borne per pale in the ſame eſcutcheon, the man's being always on the dexter, and the woman's on the ſiniſter ſide: but if the woman be an heireſs, her coat muſt be borne by the huſband on an eſcutcheon of pretence.

BARONET, a degree of honour, next to a baron, created by king James I. in order to ſettle a plantation in Ulſter, for which purpoſe each was to maintain thirty ſoldiers in Ireland for three years after the rate of eight-pence ſterling per day to each ſoldier.

This honour is hereditary, and they have the precedence of all knights, except thoſe of the garter, bath bannerents, and privy counſellors.

BARONY, the honour and territory which gives title to a baron.

BARRACKS, or BARACKS, places erected for ſoldiers to lodge in, eſpecially in garriſons.

BARRATRY, in the marine acceptation, a defrauding the owners by the maſter of the ſhip.

BARREL, in commerce, a round veſſel, in the form of a ſmall tun, uſed for holding ſeveral ſorts of merchandize.

BARREL, a liquid meaſure, and is of three kinds, wine, beer, and ale. The firſt contains thirty-one gallons and a half; the ſecond thirty-ſix gallons; and the third thirty-two gallons.

BARREL, a certain weight of ſeveral merchandizes, which not only differs in different commodities, but alſo in different places. A barrel of Eſſex butter weighs one hundred and ſix pounds; and a barrel of Suffolk butter two hundred and fifty-ſix pounds. The barrel of herrings ſhould contain thirty-two gallons wine-meaſure, and will hold about a thouſand herrings. The barrel of ſalmon ought to contain thirty-two gallons. The barrel of eels the ſame. The barrel of ſoap muſt weigh two hundred and fifty-ſix pounds.

BARREL, in mechanics, by watch-makers the cylinder about which the ſpring is wrapped; and by gun-ſmiths the cylindrical tube of a gun, piſtol, &c. through which the ball is diſcharged.

BARREL, in anatomy, a cavity behind the tympanum of the ear, about four or five lines deep, and five or ſix wide. It is lined with a fine membrane, on which are ſeveral veins and arteries. See EAR.

Thundering BARRELS, in military affairs, a ſort of caſks, filled with bombs, grenades, and other deſtructive inventions, to be rolled down a breach.

BARRICADE, or BARRICADO, a military term, a fence formed in haſte with veſſels, baſkets of earth, trees, palliſades, &c. to preſerve an army from the ſhot or aſſault of the enemy. The moſt uſual materials for barricades conſiſt of pales or ſtakes, croſſed with battoons, and ſhod with iron at the feet; uſually ſet up in paſſages or breaches.

BARRICADE, in naval architecture, a ſtrong wooden rail, ſupported by ſtanchions, extending acroſs the foremoſt part of the quarter-deck. In a veſſel of war, the vacant ſpaces between the ſtanchions are commonly filled with rope-matts, cork, or pieces of old cable; and the upper part, which contains a double rope-netting above the rail, is ſtuffed with full hammocks to intercept the motion, and prevent the execution of ſmall-ſhot in time of battle.

BARRIER, in fortification, a kind of fence made acroſs a paſſage or the entrance of a retrenchment, compoſed of large ſtakes about four or five feet high, placed eight or ten feet diſtant from one another, with tranſums, or over-thwart rafters, to ſtop either horſe or foot. In the middle is a moveable bar of wood, that opens or ſhuts at pleaſure.

BARRISTER, a perſon qualified and impowered to defend the cauſe of clients in the courts of juſtice. The word is formed from the Latin, *bar*, *bara*, the place where they ſtand to plead. Barriſters are diſtinguiſhed by the epithets outer and inner. The outer-barriſters are thoſe who plead without the bar. The inner-barriſters are thoſe who are allowed the privilege of pleading within the bar. But at the Rolls, and ſome other inferior courts, all barriſters are admitted within the bar.

BARROW, in ſome ſalt works, a name given to wicker caſes in the form of a ſugar loaf, wherein the ſalt is put to drain.

⁎ BARROW (ISAAC) an eminent mathematician and divine, was the ſon of Mr. Thomas Barrow, a linen-draper, in London, where he was born, in 1630. He was at firſt placed at the charter-houſe ſchool, for two or three years, where his behaviour afforded but little hopes of ſucceſs, in the profeſſion of a ſcholar, he being fond of fighting, and promoting it among his ſchool-fellows; but being removed from thence, his diſpoſition took a happier turn; and having ſoon made a great progreſs in learning, he was admitted a penſioner of Peter houſe, in Cambridge. He now applied himſelf with great diligence to the ſtudy of all parts of literature, eſpecially to that of natural philoſophy. He afterwards turned his thoughts to the profeſſion of phyſic, and made a conſiderable progreſs in anatomy, botany, and chemiſtry; after this he ſtudied chronology, aſtronomy, and geometry. He then travelled into France and Italy, and in a voyage from Leghorn to Smyrna, gave a proof of his bravery; for the ſhip being attacked by an Algerine pirate, he ſtaid upon deck, and with great intrepidity, fought till the pirate, perceiving the ſtout reſiſtance the ſhip made, ſteered off and left her. It may not be improper to give here, another inſtance of his remarkable intrepidity and ſcrupuloſity. He was once at a gentleman's houſe in the country, where the neceſſary was at the end of a long garden, and conſequently at a great diſtance from the room where he lodged. As he was going to it before day, for he was a very early riſer, a fierce maſtiff, who uſed to be chained up all day, and let looſe at night for the ſecurity of the houſe, perceiving a ſtrange perſon in the garden, at that unſeaſonable time, ſet upon him with great fury. The doctor catched him by the throat, threw him, and lay upon him, and whilſt he kept him down, conſidered what he ſhould do in that exigence; once he had a mind to kill him, but he altered this reſolution, upon recollecting that this would be unjuſt, ſince the dog did only his duty, and he himſelf was in fault for rambling out of his room before it was light. At length he called out ſo loud, that he was heard by ſome of the houſe, who came preſently out, and freed both the doctor and the dog from the danger they were both in. Dr. Barrow was for ſome time Greek profeſſor in the univerſity of Cambridge, and profeſſor of geometry in Greſham college. He was afterwards maſter of Trinity college, and vice-chancellor of the univerſity. The doctor's works were very numerous, and ſuch as do honour to the Engliſh nation. He was unrivalled in mathematical learning, and eſpecially in the ſublime geometry, in which he has been excelled only by one man, and that man was his pupil, the great Sir Iſaac Newton. This excellent perſon, who was a bright example of Chriſtian virtue, as well as a prodigy of learning, died on the 4th of May, 1677, in the forty-ſeventh year of his age, and was interred in Weſtminſter-abbey, where a monument, adorned with his buſt, was ſoon after erected, by the contribution of his friends.

BARRY, in heraldry, is when an eſcutcheon is divided bar-ways, that is from ſide to ſide, into an even number of partitions, conſiſting of two or more tinctures, interchangeably diſpoſed. It is to be expreſſed in the blazon by the word *barry*; and the number of pieces muſt be ſpecified; but if the diviſions be odd, the field muſt be firſt named, and the number of bars expreſſed.

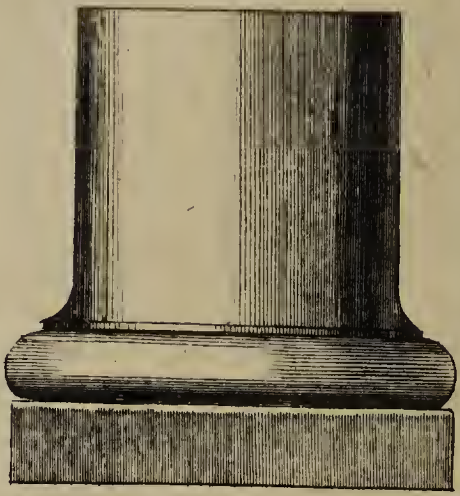
BARRY-BENDY, is when the eſcutcheon is divided evenly, bar and bendways, by lines drawn tranſverſe and diagonal, interchangeably varying the tinctures of which it conſiſts. See plate XI. *fig.* 1.

BARRY-PILY, is when a coat is divided by ſeveral lines drawn obliquely from ſide to ſide, where they form acute angles.

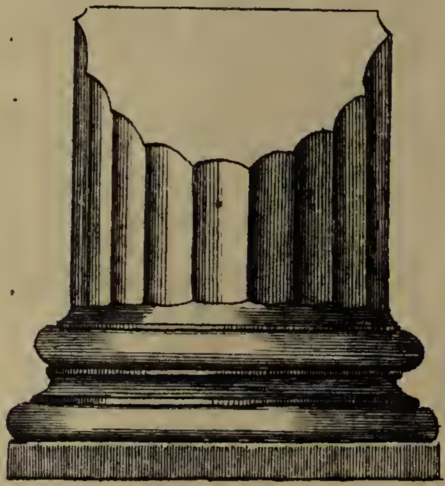
BARTERING, in commerce, exchanging one commodity or parcel of goods for another.

Plate X. Facing Baſe.

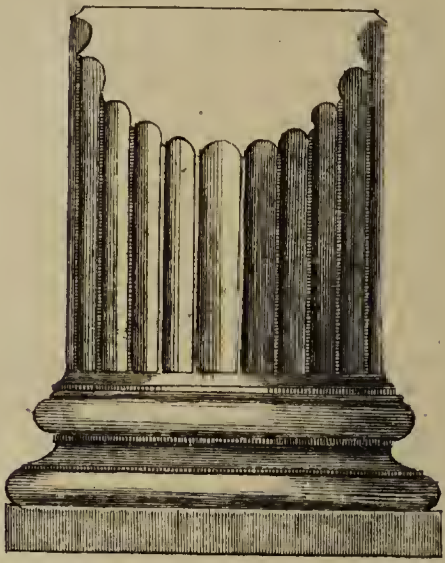
Tuscan Base.



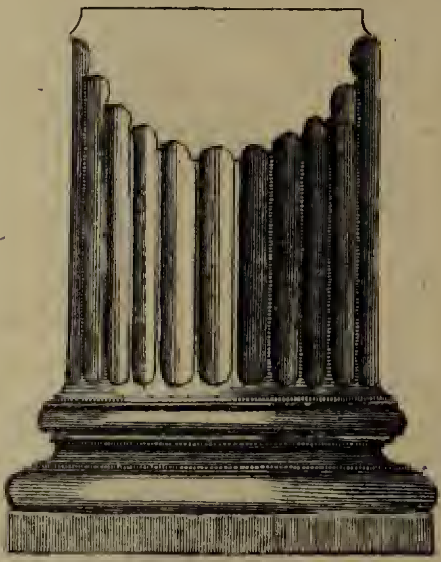
Doric Base.



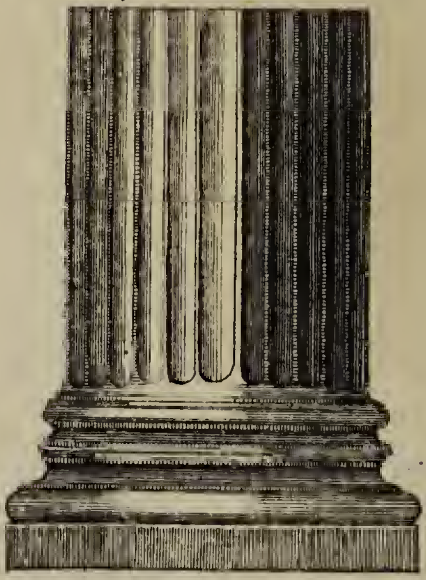
Ionic Base.



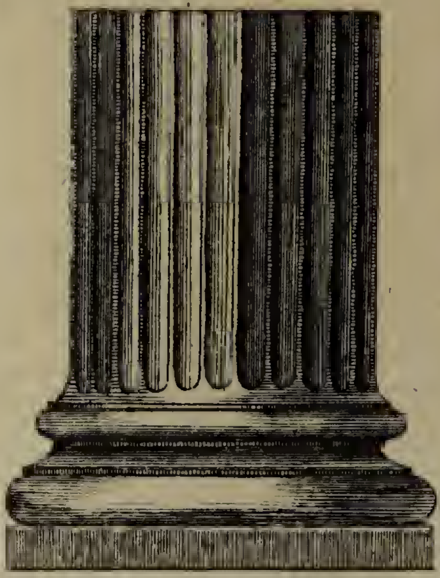
Corinthian Base.

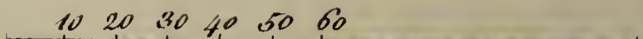


Composite Base.



Attic Base.





Models

BARUCH, the name of an apocryphal book, ſubjoined to the canon of the Old Teſtament.

BASALTES, in natural hiſtory, a ſpecies of marble of a fine texture, and of a deep gloſſy black colour. The moſt remarkable quality of this marble is its figure, being never found in ſtrata, like other marbles, but always ſtanding up in form of regular angular columns, compoſed of a number of joints placed on and nicely fitted to each other, as if formed by the hand of a ſkilful workman. It is remarkably hard and heavy, will not ſtrike fire with ſteel, and makes a fine touchſtone. The Giants Cauſeway in Ireland is entirely compoſed of the baſaltes; and is, perhaps, the moſt ſurprizing natural production of this kind in the world.

BASE, in geometry, the loweſt ſide of the perimeter of a figure; thus any ſide of a triangle may be called its baſe; but the loweſt, or that parallel to the horizon, is moſt properly the baſe.

BASE, in architecture, any particular body that bears upon another; but particularly for the lower part of a column and pedeſtal.

BASE *of a Column*, that part between the ſhaft and the pedeſtal; or, if there be no pedeſtal between the plinth and the zocle. The ornaments of the baſe, which are ſuppoſed to have repreſented originally the iron circles with which the trees and poſt that ſupported the ancient houſes were bound, are different in the different orders.

The Tuſcan BASE, conſiſts only of a ſingle tore, beſides the plinth. See plate X.

The Doric BASE has an aſtragal more than the Tuſcan, though that was indeed introduced by the moderns. See plate X.

The Ionic BASE has a large tore over two ſlender ſcotias, ſeparated, according to Vitruvius, by two aſtragals. See plate X.

The Corinthian BASE has two tores, two ſcotias, and two aſtragals. See plate X.

The Compoſite BASE has an aſtragal leſs than the Corinthian. See plate X.

The Attic BASE has two tores and a ſcotia; and is a proper baſe for either the Ionic or Compoſite columns. See plate X.

BASE *Rudentée*, in architecture, that which has its tores cut like cables.

BASE, in fortification, the exterior ſide of a polygon, or an imaginary line drawn from the flanked angle of a baſtion to the angle oppoſite to it.

BASE, in gunnery, the leaſt ſort of ordnance, the diameter of whoſe bore is one inch and a quarter, and its weight 200 pounds: the length of the bore is four feet; its ſhot a pound and a half in weight, and one inch and one eighth in diameter.

BASE *Line*, in perſpective, the common ſection of a picture, and the geometrical plane.

BASE *of the Heart*, in anatomy, its upper part.

BASE *Court*, any court that is not of record.

BASEMENT, in architecture, implies a baſe continued a conſiderable length, as round a houſe, room, &c.

BASHAW, a Turkiſh governor of a province, city, or other diſtrict.

BASIL, in botany, the Engliſh name for a genus of plants called ocymum. See OCYMUM.

BASIL, among joiners, the ſloping edge of a chiſſel, or of the iron of a plane. They uſually make the baſil twelve degrees for ſoft wood, and eighteen for hard; it having been found by experience, that the more acute the baſil is, the better it cuts; and the more obtuſe it is, the ſtronger and fitter for ſervice.

Order of St. BASIL, the moſt ancient of all the religious orders, and was very famous in the Eaſt during the latter part of the fourth century; though ſome doubt whether St. Baſil was really the founder.

BASILIC, in ancient architecture, a large hall, or public room, with iſles, porticoes, galleries, tribunals, &c. being the term applied to thoſe places where princes adminiſter juſtice in perſon.

BASILICA, in anatomy, the interior branch of the axillary vein, running the whole length of the arms. See VEIN.

BASILICON, in pharmacy, two officinal ointments, diſtinguiſhed by the epithets black and yellow; and formerly much uſed by ſurgeons in dreſſing wounds.

BASILICS, in antiquity, a body of the Roman laws, tranſlated into Greek. In this ſyſtem is comprehended the inſtitutes, digeſts, code, novels, and ſome edicts publiſhed by Juſtinian and other emperors.

BASILIDIANS, a ſect of heretics in the ſecond century, from their leader Baſilides, a diſciple of Menander. He flouriſhed in Egypt about 112, and there chiefly propagated his hereſy.

BASILISK, a fabulous kind of ſerpent, ſaid to be produced from a cock's egg hatched by a ſerpent, and ſuppoſed to kill by its breath or ſight.

BASILISK, in military affairs, a piece of ordnance, carrying a ſhot of forty-eight pounds, and weighing about ſeven thouſand two hundred pounds.

* BASINGSTOKE, a town of Hampſhire, is governed by a mayor, a recorder, ſeven aldermen, ſeven burgeſſes, &c. It is ſixteen miles north-eaſt from Wincheſter, and forty-eight ſouth-weſt from London. Long. 0. 10. W. lat. 51. 20. N. It has a market on Wedneſdays, and two fairs, held on Wedneſday in Whitſun-week, for pedlary, and Oct. 10, for hiring ſervants and cattle.

BASIOGLOSSUS, in anatomy, a muſcle ariſing from the baſe of the os hyoides, and running along the middle of the tongue towards its apex. It is aſſiſted by the ceratogloſſus, and draws the tongue backwards.

BASKETS *of Earth*, in the military art, ſignify ſmall baſkets filled with earth, and uſed in ſieges on the parapet of a trench.

BASKET-SALT, a very fine ſalt, whiter, and compoſed of ſmaller grains than the common ſort.

BASON, in mechanics, a term uſed by glaſs-grinders for a diſh of copper, iron, &c. in which they grind convex-glaſſes, in the ſame manner as concave ones are ground on ſpheres. The hatters term the iron mould in which they form the matter of their hats, a baſon; and they give the ſame name to the leaden one for the brims of hats; the latter has an aperture in the middle big enough for the largeſt block to go through.

BASON or FOUNTAIN, among gardeners, a reſervoir for holding water either for the ornament or uſe of the garden. As to the depth of baſons, they are uſually from two to three feet; this depth being ſufficient to ſecure the bottom of the baſons from froſt, and to dip watering-pots. But if they are to ſerve as reſervoirs, or to keep fiſh in, then they may be made four or five feet deep, which will both hold water enough for the fiſh to breed in, and alſo to bear a boat. Deeper than this they ſhould not be; for if they were deeper, they would be dangerous as to the drowning of perſons who might chance to fall in.

Baſons are now generally rejected by perſons of good taſte, as not ornamental; therefore, where there is a neceſſity to make reſervoirs for water for the uſe of gardens, they are commonly dug in the loweſt part of gardens, or where the ſpot is moſt convenient for receiving the water which may run from the adjacent grounds in hard rains. Theſe ponds ſhould have their ſides made very eaſy; for if they are too upright, the earth frequently breaks down, by the water waſhing and making it hollow below: the ſides and bottom of theſe ponds ſhould be laid nine or ten inches thick with well-wrought clay; and, as the clay is finiſhed, it ſhould be well covered, to prevent the ſun and wind from cracking it before the water is let in. The figures of theſe ponds ſhould not be regular; for the ſhape of the hollow, where they are made, ſhould be followed, which will ſave expences, and have a better appearance.

BASS, in muſic, that part of a concert which conſiſts of the graveſt and deepeſt ſounds, and is played on the largeſt pipes or ſtrings of a common inſtrument, as of an organ, lute, &c. The baſs is the principal part of a muſical compoſition, and the foundation of harmony; for which reaſon it is a maxim among muſicians, that when the baſs is good, the harmony is ſeldom bad.

Counter BASS, the ſecond or double baſs, where there are ſeveral in the ſame concert.

Thorough BASS, or *Baſſa Continuo*, the harmony made by the baſs viols, theorbos, &c. continuing to play both while the voices ſing, and the other inſtruments perform their parts, and alſo filling up the intervals when any of the other parts ſtop. It is played by figures marked over the notes on the organ, harpſichord, &c. and frequently ſimple and without figures, on the baſs-viol and baſſon.

BASSOON, a muſical wind inſtrument blown with a reed. It is furniſhed with eleven holes, and uſed as a baſs in a concert of hautboys, flutes, &c.

BASSO-RELIEVO, or BASS RELIEF, a piece of ſculpture, where the figures do not protuberate, or ſtand out far beyond the plane on which they are formed.

BASS-VIOL, a muſical inſtrument reſembling a violin, but much larger. It is ſtruck with a bow, like a violin, has generally the ſame number of ſtrings, and eight ſtops, which are ſubdivided into ſemi-ſtops. Its ſound is grave, and has a very noble effect in a concert.

BASTARD, a natural child, or one born of an unmarried woman.

By the laws of England, a baſtard is incapable of inheriting lands, as the heir of his father; nor can any one inherit lands heir to him, except the children of his own body; for by law, a baſtard has no relation, and he himſelf is accounted the firſt of his family.

BASTARDY, a defect of birth, objected to one born out of wedlock, and is either general or ſpecial.

Plate XI. Facing Baſtion.

Barry Bendy.

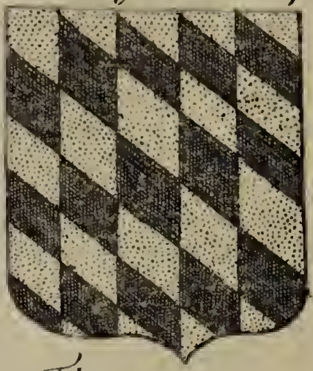
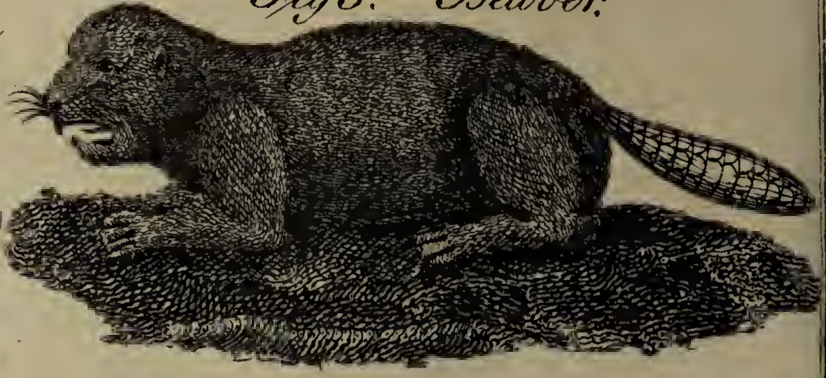
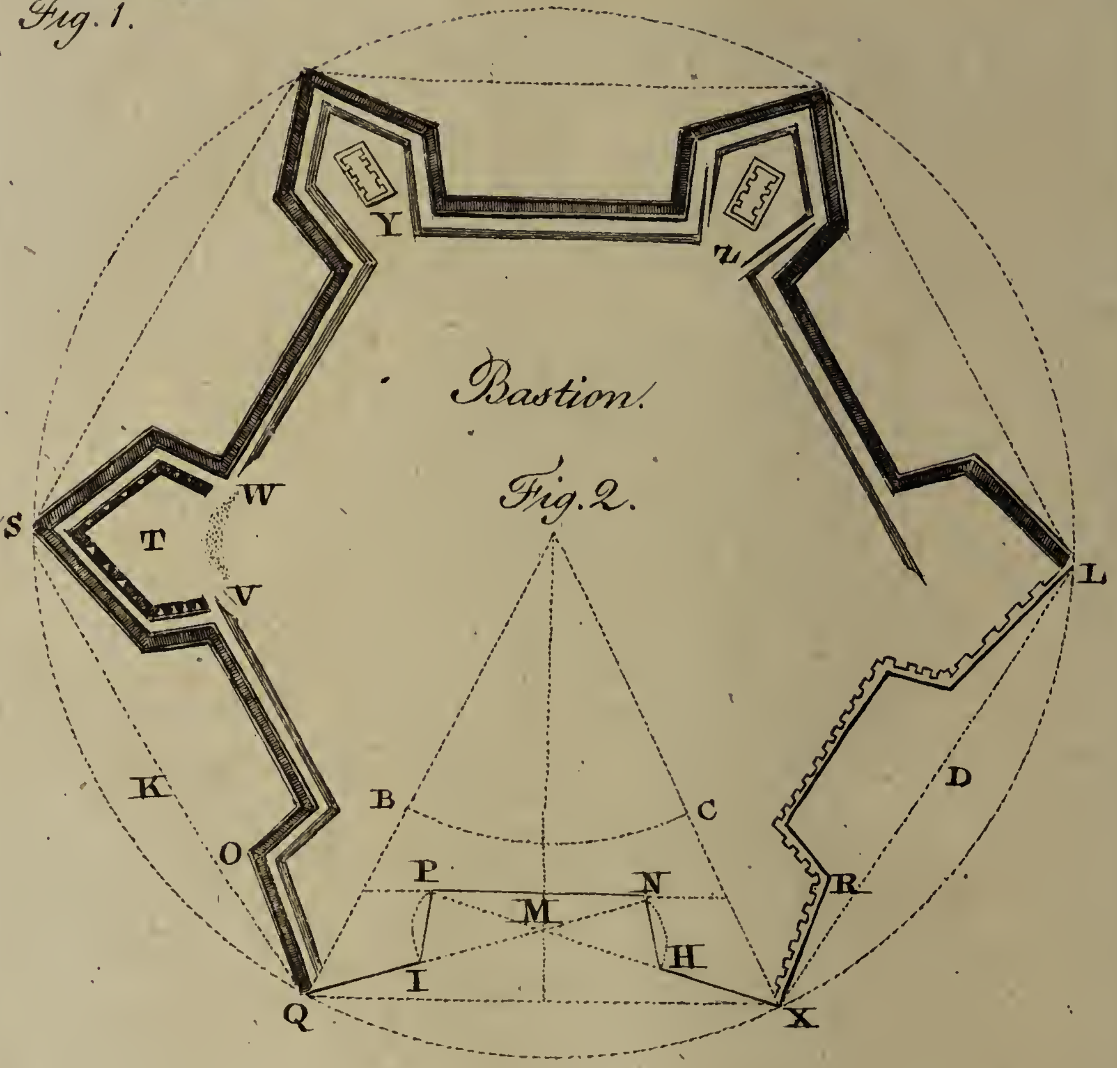


Fig.1.

Fig 3: Beaver.





Bastion.

Fig.2.

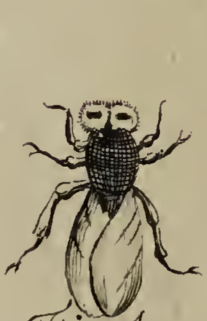


Fig.4.

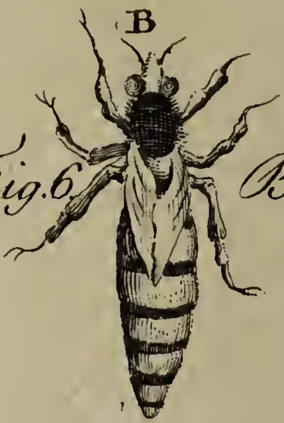


Fig.6. Bee.

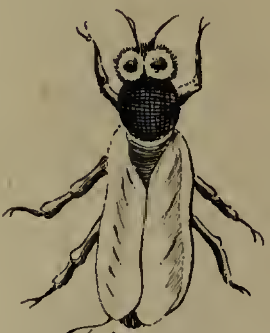


Fig.5.

General BASTARDY is a certificate from the biſhop of the dioceſe to the king's juſtices, after enquiry made whether the party is a baſtard or not, upon ſome queſtion of inheritance.

Special BASTARDY is a ſuit commenced in the king's courts againſt a perſon that calls another a baſtard.

BASTION, in fortification, a large maſs of earth, uſually faced with ſods, ſometimes with brick or ſtone, ſtanding out from a rampart, of which it is a principal part.

A baſtion conſiſts of two faces and two flanks; the faces include the angle of the baſtion, and their union forms the outmoſt, or ſaliant angle, called alſo the angle of the baſtion; and the union of the two faces to the two flanks, makes the ſide angles, called alſo the ſhoulders or epaules; and the union of two other ends of the flanks to the two curtains, makes the angles of the flanks.

Thus in *fig.* 2. plate XI. the lines H X, R X, O Q, Q I, are the faces of the two baſtions X and Q; H N, I P, the flanks of the ſame baſtions; and N P the curtain. The angles R X H, O Q I, are the ſaliant angles, or angles of the baſtions; the angles N H X, P I Q, are the ſide angles, ſhoulders, or epaules; and the angles H N P, I P N, the angles of the flanks. The lines A X, A Q, are called the capitals of the baſtions X and Q. Z and Y are two powder magazines; T and W cavaliers.

The great rule in conſtructing a baſtion is, that every part of it may be ſeen and defended from ſome other part: mere angles therefore are not ſufficient; but flanks and faces are neceſſary. The faces muſt not be leſs than twenty-four Rhineland perches, nor more than thirty. The flanks of a baſtion, provided they ſtand at the ſame angle under the line of defence, are ſo much the better the longer they are; they muſt therefore ſtand at right angles with the line of defence. At the ſame time the diſpoſition of the flanks make the principal part of fortification, as on them the defence chiefly depends; and it is this that has introduced the various kinds of fortifying. The angle of the baſtion muſt exceed 60 degrees, otherwiſe it will be too ſmall to give room for guns, and will either render the line of defence too long, or the flanks too ſhort. It muſt therefore be either a right angle, or ſome intermediate one between that and ſixty degrees. See the article FORTIFICATION.

Solid BASTION, that which has the void ſpace filled up entirely, and raiſed to an equal height with the rampart.

Void or *Hollow* BASTION, that which is only ſurrounded with a rampart and parapet, having the ſpace within void or empty.

Flat BASTION, a baſtion built in the middle of the curtain, when it is too long to be defended by the baſtions at its extremities.

Cut BASTION, that whoſe point is cut off, inſtead of which it has a re-entering angle, or an angle inwards, with two points outwards; and is uſed, either when the angle would, without ſuch a contrivance, be too accute, or when water, or ſome other impediment, prevents the baſtion from being carried to its full extent.

Compoſed BASTION, when two ſides of the interior polygon are very unequal, which alſo renders the gorges unequal.

Deformed BASTION, when the irregularity of the lines and angles cauſes the baſtion to appear deformed or out of ſhape.

Demi BASTION is compoſed of one face only, has but one flank, and a demi-gorge.

Double BASTION, that which is raiſed on the plane of another baiſtion.

Regular BASTION, that which has its true proportion of faces, flanks and gorges.

BASTON, or BATOON, in architecture, a kind of moulding in the baſe of a column, called alſo a tore.

BASTON, or BATOON, in heraldry, a kind of bend only one half of the uſual breadth. It reſembles a truncheon, and is the proper mark for baſtardy.

BAT, in natural hiſtory, a kind of mungrel, or amphibious ſort of animal, partaking both of the mouſe and bird, and flying though without feathers. The bat ſeems to be a medium between the quadruped and feathered kinds. They lay themſelves up during the winter in the drieſt receſſes of caverns; where, fixing their talons to the roof, they cover their bodies with their wings, and in that poſition ſleep for ſeveral months.

* BATAVIA, an exceeding fine town in all the Eaſt-Indies, is ſituated in the iſland of Java, and is the capital of all the Dutch Eaſt India ſettlements. The ſtreets are long and broad, all drawn by a line, with two rows of trees, always green, and which at all time afford a refreſhing ſhade when the ſun ſhines. Moſt of the ſtreets are thirty feet broad,

and on both ſides near the houſes paved with bricks. There are eight principal ſtreets, of which Princes-ſtreet is the chief. It begins at the point of the caſtle, and runs in a ſtraight line to the town-houſe. This is on the eaſtern ſide of the river that runs through the town. The weſtern bank of the river is planted with pleaſant trees, and adorned with houſes, all in a ſtraight line, as far as the Dieſt-gate. There are fourteen-ſtreets with canals in the middle. Among the public buildings, the church called the Croſs Church is the chief. It is built all of ſtone, and has a ſteeple in the middle, finely adorned with iron work; this church has a great deal of fine carving, and excellent workmanſhip, both within and without. The town-houſe ſtands very near the centre of the city, in a ſpacious ſquare.

There are ſeveral ſtructures which properly belong to the Eaſt India company, wherein the artificers are lodged, and their goods, ſtores, and rice laid up. They have particular markets for fiſh, rice, fleſh, fowls, and fruit. The caſtle is of a quadrangular form, with two baſtions that front the city. The weſt ſide of the river waſhes the walls of the caſtle, which is incloſed by part of the city, and lies open on that ſide. The two other baſtions face the ſea, and all the baſtions, as well as the curtains, are faced with white ſtone, from the bottom to the top. The ditch is very broad and deep, and is incloſed with a quickſet hedge. In this caſtle the governor of all their dominions in the Indies reſides, and all the members of the council dwelling at Batavia; as alſo the head factors, and other neceſſary officers belonging to the company. The palace of the governor ſurpaſſes all the reſt. Long. 105. 5. E. Lat. 6. 10. S. The land which ſurrounds the city is all well cultivated with rice, ſugar-canes, gardens, orchards, country-houſes, wharfs, and ſugar mills, which are all of great conſequence to this city. There are likewiſe four gun-powder mills, a corn-mill, a ſaw-mill, and a paper-mill. There are forts at certain diſtances from the city, to keep the barbarous inhabitants in awe, that the reſt may manage their buſineſs with ſecurity. The inhabitants of Batavia are either citizens or ſervants of the company, and are of divers nations; but the Dutch exceed the reſt, both in riches and dignity, and enjoy the places of honour and profit.

The government is the ſame as in the United Provinces, and conſiſts of ſix peculiar colleges, or councils. The firſt is compoſed of the members of the council of the Indies, in which all affairs of ſtate are tranſacted, and the grievances of the people redreſſed. The ſecond conſiſting of nine perſons, beſides the preſident, manage every thing relating to the revenue and treaſury. The third is compoſed of aldermen or ſenators, choſen out of the principal inhabitants, who determine cauſes between the citizens. The fourth is made up of the overſeers of the hoſpitals, and their buſineſs is to take care of poor orphans. The fifth council is to determine matters of leſs moment. They grant licenſes for marriages; and will not permit a man to marry before twenty-one, nor a maid before eighteen, nor yet muſt a Chriſtian marry with a Pagan or Mahomedan. The ſixth is the council of war, where matters are determined relating to military affairs. But matters of conſequence are referred to the ſenators.

The grounds about Batavia, and indeed all the iſland of Java, are extremely fertile; European plants grow ſtronger and larger than in their native ſoils, and ſeeds brought from diſtant parts produce herbs, plants, and fruit to great perfection; the vines, which flouriſh all the year round, are in great plenty, and yield excellent grapes, each bunch weighing about a pound.

Bamboos grow all over Batavia. They are ſtrait canes or reeds, which ſeem to be cloven at the top. They grow in the water, and bear flowers like white lilies, which have a moſt agreeable ſmell.

BATCHELOR, or BACHELOR, a ſingle man, who has never been married.

BATCHELORS, in the univerſities, perſons who have attained to the *baccalaureate*, or taken the firſt degree in the liberal arts or ſciences.

BAT-FOWLING, a method of catching birds in the night by lighting large candles, or torches, near the place where they are at rooſt; for, upon beating them up, they fly immeditiately to the flame, where they are eaſily caught in nets, or beat down with buſhes faſtened to the ends of poles.

BATH, *Balneum*, a ſufficient quantity of water collected in ſome convenient recepticle for perſons to waſh themſelves in, either for health or pleaſure: and is either hot or cold.

Hot BATHS, called by the ancients thermæ, produce the moſt ſalutary effects in a great number of diſeaſes; and owe their origin partly to an admixture of ſulphureous particles, while the water is paſſing through the ſubterraneous canals, and partly to the fumes or vapours exhaling through the pores of the earth, where ſulphur is found either pure or impure, as in coals, amber, iron, nitre, &c. The principal hot baths in our country, are thoſe at the city of Bath in Somerſetſhire; and thoſe at Buxton and Matlock in Derbyſhire.

Cold BATHS were held by the ancients in the greateſt eſteem; and the preſent age can boaſt of abundance of noble cures performed by them. Bathing will always act the part of a diuretic, and plunging over head in cold water, eſpecially in that of the ſea, will do more in the cure of melancholy, madneſs, and particularly that occaſioned by the bite of a mad dog, than any medicine. There is nothing better adapted to the cure of frigidity, when owing to a former exceſs of venery, than the cold bath. It will alſo contribute its ſhare to the cure of a ſimple gonorrhœa, and fluor albus. It is often ſucceſsful in a palſy; and thoſe who uſe it frequently are little affected with the changes of the weather.

Artificial BATHS are of various kinds, and adapted to various diſorders; ſome are made of cephalic and nervous drugs boiled in light and pure water.

For preparing baths of this kind, we principally make uſe of bay leaves, baum, ſouthernwood, marjoram, wild thyme, roſemary, hyſſop, clary, dried mint, penny-royal, feverfew, and the flowers of camomile and roſemary; all which are put into a bag with the addition of a few handfuls of common ſalt, add a little potaſh, and gently boiled in water. In this medicinal water the patient is to be bathed in a bathing tub. It produces very happy effects in parylitic diſorders, imbecility, and weakneſs of the joints; and proves very ſerviceable to weak, cachectic, and cold conſtitutions; eſpecially in old patients, whoſe ſtrength is impaired, their nerves weakened, and the tone of the ligaments of their joints in ſome meaſure deſtroyed.

Vapour BATHS are where the vapours ariſing from burning ſpirits of wine, or from herbs boiled in wine, water, milk, &c. have immediate acceſs to either the whole body, or ſome particular parts. Theſe warm exhalations are of very ſingular efficacy in promoting ſweat, opening the ſubcutaneous ducts, ſoftening the hardened parts, relaxing ſuch as are tenſe and rigid, and diſſolving viſcous and tenacious humours. Vapour baths are therefore of ſingular ſervice in cold diſtempers, anaſarcas, œdematous tumours, and where the limbs are become paralytic. In that terrible ſpecies of teneſmus which generally accompanies a dyſentery, the ſteams of milk in which elder-flowers have been boiled, afford inſtantaneous relief.

BATH, in antiquity, a meaſure uſed among the Jews, containing the tenth part of an omer, or ſeven gallons and four pints as a liquid meaſure; or three pecks and theee pints as a dry meaſure.

BATHS, in architecture, ſuperb buildings erected by the ancients for the ſake of bathing.

Knights of the BATH, a military order inſtituted in England, according to ſome authors by Richard II. who confined their number to four; but according to others it was founded by Henry IV. in the year 1399, and their number limited to forty-ſix.

Their motto is *tres in uno*, alluding to the three theological virtues.

* BATH, a city in Somerſetſhire, ſeated on the river Avon. It has but one pariſh-church beſides the cathedral or abbey; however, of late it has had many elegant buildings erected for the reception of perſons of quality, who reſort every ſeaſon to drink or bathe in the waters; there is likewiſe a magnificent hoſpital, built by the contributions of the nobility and gentry, for the benefit of the poor, who come from all parts to be cured of various diſeaſes. It is governed by a mayor, recorder, common council, &c. and has two markets, on Wedneſday and Saturday; it has two fairs, held on February 3, and June 29, for cattle. There is a bridge over the Avon, which river, not many years ſince, was made navigable to Briſtol. It is much enlarged ſince the walls were built, which are ſaid to be very ancient; there are four gates, namely, the north, weſt, and ſouth, the fourth leads only to the river; of theſe the weſt-gate is beſt, being a handſome ſtone building; without the walls there is a handſome ſquare, with a fine chapel, and an obeliſk in the centre ſeventy feet high. The ſtone of which the houſes are built is moſtly dug out of quarries on Carlton-Down, and is conveyed down a ſteep hill by a curious contrivance of the late Mr. Allen. Over the market-houſe is the town-hall, which is a large ſtone building, ſupported by twenty-one ſtone pillars. In 1740, they began to build another new ſquare in the gardens adjoining to the

public walks on the ſouth ſide of the city, near the Avon, which is now the chief ornament of the city.

The two ſeaſons for drinking Bath waters are the ſpring and fall; the ſpring begins with April and ends with June; the fall with September, and ends at December: the ſpring ſeaſon is the beſt for health, and the fall for pleaſure. The common charge for bathing is two ſhillings each time; that is, a ſhilling for the chair, ſix-pence for linen, and ſix-pence to the guide. The hot ſprings of this city exhale a kind of a miſt, which is not of a very agreeable ſmell, on account of the ſulphureous particles wherewith they abound. That called the Croſs Bath is of a gentle moderate warmth, for which reaſon a perſon may ſtay much longer in it than in the reſt. It is incloſed with a wall, on the ſides of which are ſeats, at the end galleries for muſic, and the ſpectators, under which are ſlips, or ranges of ſmall dreſſing-rooms, one of which ranges are for the gentlemen, and the other for the ladies, who being dreſſed in linen habits, go both together into the water, the men keeping on one ſide, and the women on the other. This bath fills in ſixteen hours. The Hot Bath, ſo called from its being hotter than the Croſs Bath, is fifty-eight feet and a half diſtant from the former. This bath has a well, which not only ſupplies its own pump with water, but that of the Croſs Bath, by means of pipes.

The King's Bath, which is much larger, is ſupplied with a great many ſlips or dreſſing-places. The Queen's Bath has no ſpring of its own, but is ſupplied by water from the King's Bath. There is alſo a bath for thoſe that are ſuppoſed to have the leproſy, or a ſimilar cutaneous diſeaſe. This is made by the overflowing of the Croſs-Bath, and the poor that bathe in it are maintained by the contribution of the wealthy, who come to uſe the waters.

The Bath water certainly acts like a ſaponaceous fluid, mixt with ſulphureous particles, which penetrate through the pores of the ſkin, and tend to diſſolve the viſcid coheſions of the blood and humours; beſides, it ſoftens the rigid fibres, relaxes the coats of the veſſels, and renders them more ſoft and yielding, to which the heat of the water does not a little contribute; for this, by rarifying the humours, diſtends the minuteſt veſſels, and renders the circulation eaſy and free: therefore we can hardly meet with a more powerful deobſtruent, or a more ready way to cure many chronic diſeaſes.

Pumping the Bath water on the parts affected has been found to be of ſingular uſe in many caſes, ſuch as pains in the head, deafneſs, the hip-gout, palſy of a limb, and local decays of the muſcular parts. At firſt pumping was uſed in the bath, but this was found inconvenient, becauſe bathing does not agree with all diſorders. Pumping is particularly ſerviceable in old pains and aches, when the pores of the ſkin are ſhut up, and when cold phlegmatic humours are fixed on any part, as alſo in ſprains and relaxations of the membranous and tendinous parts. Bath water, taken inwardly, ſtrengthens the ſtomach, invigorates the blood, helps digeſtion, and conſequently beſtows freſh vigour on the vitals. Bath is 108 Miles weſt of London.

BATON, or BASTON. See BASTON.

BATTALIA, an army drawn up in order of battle.

BATTALION, a ſmall body of infantry drawn up in order of battle, ready to engage. A battalion uſually contains from five to eight hundred men; but the number is not preciſely determined. They are divided into three companies, one of which is grenadiers. They are uſually drawn up with ſix men in file, or one before another. Some regiments conſiſts of one battalion only, while others are divided into four or five.

* BATTEL, a town in Suſſex, fifty-ſeven miles eaſt-by-ſouth from London, with a market on Thurſdays. It has two fairs, the one on Whit-Monday, and the other on November 22, for cattle and pedlars wares. It was formerly called Epiton, and is the place where William the Conqueror vanquiſhed king Harold, on October 14, 1066. William, in memory of this victory, erected an abbey, called it Battle Abbey; and if a criminal could but reach this abbey, he was diſmiſſed from thence, and was afterwards in no danger of puniſhment for his paſt faults. The abbey was a large and noble ſtructure, as may be judged by the gateway, which is ſtill entire, as well as from the other remains. Soon after its diſſolution the lord viſcount Montacute built a ſtately pile on the ſouth ſide, which is now become ruinous. This abbey was honoured with the mitre, and was valued at 881 l. according to Dugdale, but by Speed at 987 l. Long. 0. 35. E. Lat. 50. 55. N.

BATTERING, in the military art, the attacking a place, &c. with heavy artillery.

BATTERING-PIECES, large pieces of ordnance, proper for battering a fortification. See CANNON.

BATTERING-RAM, a machine uſed by the ancients in ſieges, for battering the walls and towers of a fortified place. The uſe of this machine is very ancient, and the invention of it aſcribed to different people. It was of two kinds, ſlung or unſlung. The former was compoſed of a large beam of oak, reſembling a ſhip's maſt, of prodigious length and thickneſs, having the head armed with a head of iron proportioned to the body, and reſembling that of a ram, and thence it had its name. This terrible machine, which according to Vitruvius weighed 440000 pounds, was ſuſpended, and equally balanced, like the beam of a pair of ſcales, with a chain, or a large cable, which ſupported it in the air in a ſtrong frame of timber, which was puſhed forwards, on the filling up of the ditch, to a certain diſtance from the wall, by means of rollers or wheels. The frame was ſecured from being ſet on fire by the beſieged, by ſeveral coverings, with which it was then caſed over. The unſuſpended ram differed from the other only in the manner of working it: for, inſtead of being ſlung by a chain or cable, it moved on ſmall wheels on another large beam.

BATTERING-RAM, in heraldry, a bearing, or coat of arms, reſembling the military engine of the ſame name.

BATTERY, in the military art, a parapet thrown up, or formed of faſcines, &c. for covering the gunners, &c. from the ſhot of the enemy. All field batteries conſiſt of four chief parts, namely, the ditch, the parapet, the platform, and the magazine. The ditch is uſually dug in the front and ſides, and ſometimes quite round; and ſerves not only to furniſh the earth neceſſary for the parapet, but it alſo prevents the enemy from entering the battery ſo readily as he might otherwiſe do. The ditch in front is commonly eighteen or twenty feet broad, and the depth about ſeven or eight feet; the ſides ſloping towards the bottom, which is about ſix feet wide: but the ditches on the ſides are about ten feet wide, and ſix feet deep. Theſe are the dimenſions uſually given; but the general practice ſeems to be, only to get earth ſufficient for the work, and not mind the regularity of the ditch; for as theſe works in attacks are uſually done by night, the keeping ſtrictly to the aſſigned dimenſions is hardly practicable. The parapet is generally raiſed about three or four feet diſtant from the brink of the ditch, the ſpace left between, called the berm or foreland, ſerving to lodge the rubbiſh beat down by the enemies ſhot, that it may not fall into the ditch. The thickneſs of the parapet ſhould be about eighteen or twenty feet, in order to be cannon-proof, and about ſeven or eight feet high, when the enemy has no command above the battery: but if they have a command over this height, the parapet ſhould be raiſed high enough to cover the men when they load the guns. The length of the parapet depends on the number of guns to be employed in the battery. Thus, for one gun allow eight yards in length; and ſix yards more for every other gun: ſo two guns have fourteen yards, three guns twenty yards, four guns twenty ſix yards, &c.

Great care ſhould be taken that the battery be not enfiladed or raked by the enemies cannon.

The parapet conſiſts of two parts, namely, the wall and the merlons. The wall is that part of the parapet which is contained in one piece from end to end, and is about two and a half or three feet high. The merlons are detached pieces of the parapet, leaving openings called embraſures, through which the cannon deliver their ſhot. The embraſures ſhould as much as is poſſible, be cut perpendicular to the parapet; therefore the battery ſhould be parallel, or nearly ſo, to the object to be battered: for direct ſhots have moſt force: and oblique embraſures weaken the merlons, or parts of the parapet ſtanding between the embraſures.

The magazine to a field battery is uſually made about fifty or ſixty yards behind the platform: it is a cavity dug in the ground, about four feet deep; the earth whereof is thrown between the pit and the platform; the ſides of the pit are ſometimes planked round to keep it dry, and prevent the earth from crumbling in; and the powder barrels placed herein are covered with hurdles and earth, or tanned hides, to preſerve the powder from wet and fire. The communication to the magazine is by a ſloping trench beginning to deſcend about five or ſix yards behind the platform; and the earth thrown on that ſide where it will moſt conveniently cover the perſons who remove the barrels of powder from the great magazine to the battery or ſmall magazine.

A Coffer BATTERY is that where the ſides of the wall and merlons only are formed of faſcines, and all the cavities or included ſpaces filled with earth.

To make a Gabion BATTERY.—Along the line pitched out for the battery, let the gabions be planted in the places where the merlons are to be: the gabions uſed are of five, ſix, and ſeven feet in diameter, and eight feet high. Each merlon muſt have ſeven; that is, three within of ſix feet diameter, next two of ſeven feet diameter, and, on the outſide, two of five feet diameter; obſerving to leave proper openings for the embraſures, of about two feet on the inſide, and nine or ten on the outſide.

Batteries of this conſtruction are uſually made on marſhy or rocky ground.

BATTERY *d'Enfilade*, that which ſcours or ſweeps the whole length of a ſtraight line.

BATTERY *en Echarpe*, one that plays obliquely.

BATTERY *de Reverſe*, that which plays on the back of the enemy.

BATTERY *à Ricochet*, are when the cannon are not loaded with their full charge of powder, ſo that the balls may ſtrike the ground before they reach the place, and by riſing again leap over the wall and do execution among the beſieged.

Croſs BATTERIES, two batteries which play athwart one another, upon the ſame object, forming an angle, and beating with more violence and deſtruction; becauſe what one bullet ſhakes the other beats down.

Camerade BATTERY, when ſeveral guns play at the ſame time upon one place.

Sunk or *Buried* BATTERY, when the platform on which the guns are placed is ſunk into the earth, ſo that there muſt be trenches or embraſures cut in the earth, againſt the muzzles of the guns, for paſſages to the ſhot.

BATTERY *of Mortars*, differs from a battery of cannon, in being ſunk into the earth, and having no embraſures.

BATTERY, in law, the ſtriking, beating, or offering any violence to another perſon: but if the plaintiff made the firſt aſſault, the defendant ſhall be acquitted, and the plantiff amerced to the king for his falſe ſuit. Battery is frequently confounded with aſſault, though in law they are different offences; and the defendant may be found guilty of aſſault, though acquitted of the battery: there may therefore be an aſſault without a battery; but battery always implies a aſſault.

BATTLE, a general engagement between two armies.

BATTLE-ROYAL, among ſportſmen, a fight between three, five, or ſeven cocks, all engaged together, ſo that the cock which ſtands longeſt wins the battle.

BATTLE-AX, a kind of halbert formerly uſed by the infantry, and firſt introduced into England by the Danes.

BATTLEMENTS, in architecture, indentures or notches in the top of a wall, or other building, in the form of embraſures.

* BATTUS, in fabulous hiſtory, an herdſman, who obſerving Mercury ſteal a drove of cattle from Apollo, to conceal the theft Mercury gave him a mik-white heifer; but ſoon after, aſſuming the ſpeech and habit of a peaſant, aſked if he had ſeen his ſtray bullocks and heifers paſs that way, and promiſed, that if he would aſſiſt him in finding them, he ſhould have a bullock and heifer for his pains. Upon this the clown haſtily told him where they were, when Mercury, to revenge his perfidy, turned him into a touch-ſtone.

* BAVARIA, a duchy and electorate in Germany. It is the moſt conſiderable part of the Circle of Bavaria, and is bounded on the north by the palatinate of Bavaria, Bohemia, and the duchy of Neuburg, on the weſt by Suabia, on the ſouth by Tyrol, and on the eaſt by the archbiſhoprick of Saltſburg, the biſhopric of Paſſaw, and Auſtria. This electorate is about one hundred and twenty miles from eaſt to weſt, and one hundred and five from north to ſouth. It is watered by a great number of rivers, whereof the principal are the Inn, the Iſer, and the Lech. It contains thirty-five cities, ninety-four market towns, eight biſhopricks, ſeventy-five convents, eleven thouſand and ſeventy-four villages, and twenty-eight thouſand ſeven hundred and nine churches. The air is healthy and temperate; the ſoil produces a little wine, ſome corn, and good paſtures. There are likewiſe ſome mines. It was raiſed to the dignity of an electorate in 1623. This electorate is divided into two general parts, High Bavaria, on the weſt, which comprehends the governments of Munich and Ingolſtadt: Lower Bavaria, on the eaſt, which contains the governments of Straubing, Landſhut, and Burckauſen. The Upper Palatinate, or the Palatinate of Bavaria, is bounded on the north by Franconia and Bohemia; the firſt bounds

it likewiſe on the weſt, and the latter on the eaſt; on the ſouth it is terminated by the duchies of Neuburg, Bavaria, and the biſhopric of Paſſaw. It is about eighty miles long, and eighty miles broad. It is well peopled, and the ſoil is fertile, but it has little trade. The principal places are Amberg, the capital, and Hochſtett, famous for the duke of Marlborough's victory over the French, in 1704.

* BAUGE, (battle of) where the duke of Clarence was killed, April 3, 1422. The duke of Clarence had marched with ten thouſand men into Anjou, with a view to reduce that province, which adhered to the dauphin; being informed that ſeven thouſand Scots, commanded by the earl of Buchan, were encamped at Bauge, in ſuch a ſtraggling manner, that the van might be eaſily cut off before the rear could come to its aſſiſtance, he reſolved to attack them immediately; and putting himſelf at the head of his horſe, began his march, after having ordered the earl of Saliſbury to follow with the reſt of the forces. When the duke reached Bauge, he found ſome Scottiſh troops intrenched in a church-yard, and ſpent ſo much time in attempting to diſlodge them, that the earl of Buchan being alarmed, aſſembled his forces, and marched up to their aſſiſtance. Clarence, inſtead of waiting for the earl of Saliſbury, attacked the new-comers with great impetuoſity, and performed many exploits of perſonal valour, until he was wounded in the face with a ſpear, by a Scottiſh knight, called Swinton, and afterwards killed with a truncheon by the earl of Buchan. His cavalry were totally routed, fifteen hundred left dead upon the ſpot, among which were the lord Raos, ſir John Grey, and ſir Gilbert Umfreville, and the earls of Huntingdon, Somerſet, and Montagne, the lord Fitzwalter, and many other perſons of diſtinction, were taken priſoners. The earl of Saliſbury did not come up till after the battle; but he favoured the retreat of the fugitives, and recovered the body of the duke of Clarence, whoſe death was juſtly regretted by all his countrymen. The dauphin was ſo well pleaſed with this victory, that he created the earl of Buchan conſtable of France; and that nobleman, in order to maintain the reputation he had acquired, undertook the ſiege of Alencon, which the earl of Saliſbury attempted to raiſe; but he was repulſed with ſome loſs by the beſiegers, though Buchan was afterwards obliged to abandon the enterprize for want of artillery. Nevertheleſs the dauphin's party began to recover their ſpirits, and gained ſeveral advantages over the Burgundians. Lahire, one of the dauphin's partiſans, defeated a body of troops under the count de Vaudemont, who was taken priſoner; and the war was carried on with great vivacity in Ponthieu, where the Burgundians were worſted in ſeveral encounters.

BAVINS, in the military art, are faggots of bruſh wood, with the bruſh at length.

BAUM, *Meliſſa*, in botany, a plant which is perennial; a native of mountainous places in the ſouthern parts of Europe; and flowers in our gardens in June. This plant, formerly celebrated for cephalic, cordial, ſtomachic, uterine, and other virtues, is now juſtly ranked among the milder corroborants.

The infuſions of it are ſometimes drank as tea in chronical diſorders proceeding from debility and relaxation, and ſometimes, acidulated with lemon juice, as a diluent in acute diſorders.

* BAXTER (RICHARD) an eminent nonconformiſt divine, was born at Rowton, in Shropſhire, November 12, 1615, and diſtinguiſhed himſelf by his exemplary life, his moderate principles, and his numerous writings. He had a congregation at Kidderminſter, and after the reſtoration became one of the king's chaplains in ordinary; preached before him once, had frequent acceſs to his royal perſon, and was offered the biſhopric of Hereford, by the lord chancellor Clarendon, which he refuſed to accept: after this he was ſeveral times arreſted, fined, and thrown in priſon, for preſuming to preach to a body of diſſenters, though he was honoured with the friendſhip of ſome of the greateſt and beſt men in the kingdom, as the duke of Landerdale, the earl of Balcarras, lord chief juſtice Hales, Dr. Tillotſon, &c.

BAY, a gulph or inlet of the ſea-coaſt, comprehended between two capes or points of land, where veſſels frequently ride at anchor ſheltered from the wind.

BAY, among farmers, that part of a barn where the corn is laid up, or the mow made.

BAY, one of the colours of the coat of horſes, and has, perhaps, its name from reſembling the colour of dried bay-leaves. There are various degrees of this colour from the lighteſt bay to the dark, that approaches the neareſt to the brown, but always more gay and ſhining. The bay is one of the beſt colours, and horſes of all the different kinds of bays are commonly good, unleſs when accidents happen to ſpoil them when they are colts. *Gibſon on Horſes.*

BAY, among huntſmen, is a term applied to a deer, which after being hard run, turns about, and defends himſelf with his horns againſt the dogs; in which caſe he is ſaid to ſtand at bay.

BAY-SALT. See SALT.

BAYONET, in the military art, implies a ſhort broad dagger, with a hollow handle of iron, of a circular form, fitted to the muzzle of the piece where it may occaſionally be faſtened; ſo that the ſoldier fires with the bayonet on the muzzle of his piece, and is always ready to act againſt the horſe.

BAYS, in commerce, a ſort of open woollen ſtuff, having a long knap, ſometimes frized, and ſometimes not. It is without any wale, and wrought in a loom with two treddles like flannel.

Bays are chiefly manufactured at Colcheſter and Bocking in Eſſex. It is exported in great quantities to Spain and Portugal, and even to Italy. Their chief uſe is for cloathing the monks and nuns, and for lining the ſoldiers cloaths. The breadth of bays is commonly from a yard and a half to two yards, and the length from forty-two to forty-eight.

BAZAT, in commerce, a long, fine cotton, brought from Jeruſalem, and is thence often called Jeruſalem cotton.

BDELLIUM, in the materia medica, a gummy reſinous juice, flowing from an oriental tree of which we have no deſcription. This gummy reſin is recommended as a corroborant and attenuant in diſorders of the breaſt, for promoting urine and the menſes, and externally for reſolving or maturating hard tumours; but is at preſent little uſed.

BEACON, a ſignal erected on ſome eminence, for giving notice of the invaſion of an enemy. It conſiſts of pitch-barrels placed upon high poles, and when the enemy appears, the barrels are ſet on fire: ſo that the flame in the night time, and the ſmoak in the day, ſpreads the alarm through the whole country.

BEACON is alſo a mark erected as a warning to ſeamen againſt rocks, ſhelves, or ſands.

BEACONAGE, the tax paid for maintaining a beacon.

BEAD, in architecture, a round moulding, commonly made upon the edge of a piece of ſtuff, in the Corinthian and Compoſite orders, cut or carved in ſhort emboſſments, like beads in necklaces.

BEAD-PROOF, among diſtillers, conſiſts in ſhaking a ſmall quantity of the ſpirits in a phial, when if the crown of bubbles ſtand for ſome time on the ſurface, the goods are eſteemed proof, that is, equal parts of rectified ſpirits and phlegm.

BEAGLE, a particular kind of hunting-dog, of which there are ſeveral ſorts.

BEAK, the bill or nib of a bird, from the form and ſtructure of which Linnæus divides the whole claſs into ſix orders. See BIRD.

BEAK, in architecture, the ſmall fillet left on the head of a larmier, which forms a canal, and makes a kind of pendant.

Chin BEAK, a moulding the ſame with the quarter-round, except its ſituation, which is inverted.

BEAK-HEAD, in naval architecture, the name given to a ſhip's head, whoſe fore-caſtle is ſquare; a circumſtance common to all veſſels of war that have two or more decks of guns.

BEAM, in architecture, the largeſt piece of wood in a building, being laid acroſs the walls, and ſerving to ſupport the principal rafters of the roof. No houſe has more than two of theſe beams, viz. one at each head: into theſe the girders of the garret floor are alſo framed, and if the building be of timber, the teazle-tenons of the poſts.

The proportion of beams near London are fixed by ſtatute, as follows: a beam 15 feet long muſt be 7 inches on one ſide its ſquare, and 5 on the other: if it be 16 feet long, one ſide muſt be 8 inches, the other 6; if 17 feet long, one ſide muſt be 10 inches, the other ſix: in the country they uſually make them ſtronger. Sir H. Wotton adviſes theſe to be of the ſtrongeſt and moſt durable timber.

Some of the beſt authors among the French have conſidered the force of ſtrength of beams, and brought their reſiſtance to a preciſe calculation, particularly M. Varignon and M. Parent. The latter has ſhewn us, that if a beam, in form of a parallelopipedon, be fixed horizontally in a wall, its reſiſtance againſt breaking at the place of its inſertion will be as the area of the ſection at the wall and the depth of the beam directly, and the length reciprocally.

M. Parent has calculated tables of the weights that will be ſuſtained by the middle, in beams of various baſes and lengths, fitted at each end into walls, on a ſuppoſition that a piece of oak of an inch ſquare, and a foot long, retained horizontally by the extremes, will ſuſtain 315 lb. in its middle, before it breaks, which it is found, by experience, it will. See *Mem. Acad. R. Scienc. an.* 1708.

BEAMS, in naval architecture, thick ſtrong pieces of timber, ſtretching acroſs the ſhip from ſide to ſide, to ſupport the decks and retain the ſides at their proper diſtance.

On the BEAM, in navigation, any diſtant object is ſo called, when it bears on a line with the ſhip's beams: thus, if a ſhip lies north and ſouth, any object on the beam muſt bear eaſt or weſt; and hence,

Before the BEAM is an arch of the horizon included between a line, croſſing the ſhip at right angles, and the object ſeen in that ſituation: thus, if a ſhip ſteers north, and diſcovers another two points before the ſtarboard beam, ſhe bears E. N. E. and ſo of abaft the beam.

BEAM, among hunters, the main ſtem of a deer's head, or that which bears the antlers, royals, and tops.

BEAM, in mechanics, the lath, or iron, of a pair of ſcales.

BEAM is alſo the name of a fiery meteor, in the form of a pillar.

BEAM, or ROLLER, among weavers, a long and thick wooden cylinder, placed lengthwiſe on the back part of the loom of thoſe who work with the ſhuttle. The threads of the warp are rolled upon the beam, and unroll as the work proceeds.

BEAM-COMPASS, an inſtrument conſiſting of a ſquare wooden or croſs-beam, having ſliding ſockets that carry ſteel or pencil points; and uſed in deſcribing large circles, where the common compaſſes are uſeleſs.

BEAM *of an Anchor*, the ſhank, or longeſt part of an anchor. See ANCHOR.

BEAM *of a Plough*, a name given to the largeſt piece of timber in a plough, and to which all the parts of the plough-tail are fixed. This beam is generally made of aſh, is ſtraight, and eight feet long in the common plough; but in the four coultered plough, it is ten feet long, and arched at the upper part. The head of this beam lies on the pillow of the plough, and is raiſed higher, or ſunk lower, as that pillow is elevated or depreſſed by ſliding along the crow-ſtaves. Near the middle it has an iron collar, which receives the tow chain from the box; and the bridle chain from the ſtake or gallows of the plough, is fixed to it a little below the collar; ſome inches below this there is a hole, in which the coulter is faſtened; and below that are two other ſmall holes, through which the heads of the retches or irons that ſupport both the ſheat and the ſhare preſs. Farther back ſtill is large perforation, through which the body of the ſheat paſſes; and behind that, very near the extremity, is another hole, through which the piece called the hinder ſheat paſſes. See PLOUGH.

BEAN, *Faba*, in botany, the name of a genus of plants, whoſe peſtil becomes a pod, containing large flatted, and in ſome degree, kidney-ſhaped ſeeds.

Mr. Tournefort has enumerated eight ſpecies of this plant, but we have only the four following ſorts, commonly ſowed in our gardens. 1. The ſmall Liſbon. 2. The Spaniſh. 3. The Sandwich. And, 4. The Windſor. The firſt and ſecond ſorts are to be planted in October and November, under warm walls and hedges, where, if they ſtand through the winter, they produce beans early in the ſpring. They may alſo be raiſed very cloſe in beds, and covered with hoops and mats in the winter; and in the ſpring planted out; but there is ſome hazard in the tranſplanting, and they will be a fortnight, or more, later than thoſe which have ſtood the winter abroad. The Liſbon bean is preferred to the Spaniſh: and the curious ought to have freſh ſeed every two years from abroad, for they are apt to degenerate, though not in goodneſs, yet in their earlineſs. The Spaniſh and Windſor beans are not to be planted till Chriſtmas, but eſpecially the Windſor, which are ſubject, more than any other kind, to be hurt by the cold. Theſe beans ſhould have an open ground, and be planted at the diſtance of two feet and a half, row from row, and four inches from one another in the rows; but if the place is cloſely ſurrounded with hedges and walls, the diſtance muſt be greater, elſe the ſtalks will run high, but they will bear very little fruit. The Sandwich beans are hardier than the Windſor, and may be planted to come in between the early crops and them; and, though not much regarded at preſent, they are a very good bean. The firſt plantation of Windſor beans ſhould be made in the middle of January; and, after that, a new plantation ſhould be made every three weeks, till the middle of May, that there may be a ſucceſſion of crops. *Miller's Gardeners Dict.*

BEAN-TREFOIL, in botany, a genus of plants whoſe fruit is an oblong pod, containing kidney-like ſeeds.

BEAR, *Urſa*, in zoology, a genus of quadrupeds, of the order of the *feræ*, or beaſts of prey; diſtinguiſhed by having only four teats, two on the breaſt, and two on the belly. It is a large but unſightly animal, and of different ſizes in different countries.

BEARD *of a Comet*, in aſtronomy, the rays which the comet emits towards that part of the heavens whither it ſeems to direct its motion; and it is this that diſtinguiſhes the beard from the tail, which implies thoſe rays that are emitted in the tract through which it has paſſed.

BEARDING *of Wool.* See WOOL.

BEARER, in architecture, a poſt, pier, or wall, erected between the two ends of a piece of timber, to ſhorten its bearing, or to prevent its whole weight reſting on the two ends only.

BEARER *of a Bill of Exchange*, one in whoſe hands the bill is, or in favour of whom the laſt order was made.

BEARING, in navigation, an arch of the horizon, comprehended between the neareſt meridian and any diſtant object, either diſcovered by the eye, or found by the ſinical proportion; as, at four P. M. we diſcovered Cape Malacha, bearing W. 64°. S. or, having the difference of latitude and longitude given, we find the bearing and diſtance by analogy.

BEAR-UP, or BEAR-AWAY, in navigation, a ſhip is ſaid to do ſo when, having ſailed ſome time with a ſide-wind, ſhe alters her courſe and ſails more before it: this is probably called bearing-up, becauſe the helm is borne up to the wind-ſide of the ſhip; for, otherwiſe, it is not only abſurd, but an abſolute contradiction, to ſay a ſhip bears-up when ſhe goes before the wind.

BEAST, a general appellation for all four-footed animals.

BEASTS *of Burden*, all four-footed animals uſed in carrying burdens. Theſe are chiefly elephants, camels, dromedaries, horſes, mules, aſſes, and the ſheep of Mexico and Peru.

BEASTS *of Chace*, the buck, the doe, the fox, the roe, and the martin.

BEASTS and FOWLS *of the Warren*, the hare, the coney, the pheaſant, and the partridge.

BEASTS *of the Foreſt*, the hart, the hind, the boar, and the wolf.

BEATIFICATION, an act whereby the pope declares a perſon beatified or bleſſed. It is the firſt ſtep towards canonization. See CANONIZATION.

BEATING *Flax* and *Hemp*. See FLAX and HEMP.

BEATING *Gold* and *Silver*. See GOLD-BEATING, &c.

BEATING, in navigation, the act of making a progreſs againſt the wind, by tacking. See TACKING. Beating, however, is generally underſtood to be turning to windward in a ſtorm or freſh wind.

BEAVER, *Fiber*, in natural hiſtory, a creature about four feet in length, and twelve or fifteen inches broad. His ſkin, in the northern regions, is generally black, but it brightens into a reddiſh tincture in the temperate climates. He is covered with two ſorts of hair, one long, and the other a ſoft down; the latter, which is an inch in length, is extremely fine and compact, and accommodates the animal with a neceſſary warmth. The long hair preſerves the down from dirt and humidity. The beaver, whether male or female, has four bags under his inteſtines, impregnated with a reſinous and liquid ſubſtance, which, when it is ejected, ſettles into a thick conſiſtence. See CASTOR.

His teeth are ſtrong, and deeply riveted into his jaws, with a long and crooked root; with theſe he cuts as well the wood with which he builds, as that which furniſhes him with food. His fore-feet reſemble thoſe of ſuch animals as hold what they eat with their paws, as apes, for inſtance, and rats, and ſquirrels; with theſe feet he digs, ſoftens, and works the clay, which is extremely ſerviceable to him. His hind feet are accommodated with membranes, or large ſkins, extending between his toes, like thoſe of ducks, and all other water-fowl; this makes it evident that the Author of nature intended the creature ſhould be amphibious. His tail is long, a little flat, entirely covered with ſcales, ſupplied with muſcles, and perpetually lubricated with oil or fat. This animal, who is an architect from his nativity, uſes his tail inſtead of a hod, for the conveyance of his clay or mortar, and a trowel to ſpread and form it into an incruſtation; the ſcales prevent theſe materials from penetrating the tail with their coldneſs and humidity; but would be injured by the air and water, were it not for the prevention of an oil, which he diſtributes all over them with his ſnout; the bags we have already mentioned are undoubtedly the magazines of this fluid. See plate XI. *fig.* 3. The beavers inhabit the ſame manſion in great numbers, unleſs violent heats, or inundations, the purſuits of hunters, ſcarcity of proviſions, or the extraordinary increaſe of their offſpring, obliges them to ſeparate. In order to raiſe themſelves a convenient abode, they chuſe a ſituation that abounds with ſuſtenance, and is waſhed by a rivulet, and where they may form a convenient reſervoir of water for their habitation. They begin with building a mole or cauſey, in which the water may riſe to a level with the firſt ſtory. This cauſey, at the foundation, may contain ten or a dozen feet in thickneſs: it deſcends in a ſlope on the ſide next the water, which, in proportion to its elevation, gravitates upon the work, and preſſes it with a ſtrong tendency towards the earth. The oppoſite ſide is raiſed perpendicularly, like our walls; and the ſlope, which at its baſis is twelve feet broad, diminiſhes towards the top, whoſe breadth does not exceed two feet: the materials of this work are wood and clay. The beavers, with an admirable facility, cut the pieces of wood, ſome as thick as a man's arm, and others as large as the thigh, and from two to four, five, or ſix feet in length, and ſometimes more, in proportion to the aſcent of the ſlope. They drive the extremity of theſe, very near each other, into the earth, and take care to interlace them with other ſtakes, more ſlender and ſupple. But as the water, without ſome other prevention, would glide through the cavities, and leave the reſervoir dry, they have recourſe to clay, which they perfectly know how to procure, and with which they cloſe up all the interſtices both within and without, and this entirely prevents all evacuation. They continue to raiſe the dikes proportionably to the water's elevation and plenty. They are likewiſe very ſenſible that their materials are not ſo eaſily tranſported by land as by water; and therefore take the opportunity of its increaſe to ſwim, with mortar placed on their tail, and ſtakes of wood between their teeth, to every place where they have occaſion for theſe materials. If the violence of the water, or the footſteps of hunters, who paſs over their work, damage it in any degree, they immediately repair the fracture, viſit all the edifice, and with indefatigable application, refit and adjuſt whatever happens to be diſconcerted: but when they are too frequently perſecuted by the hunters, they only work in the night, or entirely diſcontinue their labours. When the cauſey, or dyke, is completed, they begin to form their cells, which are round, or oval apartments, divided into three partitions, raiſed one above another. The firſt is ſunk below the level of the dyke, and generally full of water; the other two are formed above it. They raiſe this ſtructure in a very ſolid manner, on the edge of their cauſey, and always in ſtories, that, in caſe the water ſhould aſcend, they may dwell in a higher ſituation. If they find any little iſland near the reſervoir, they fix their dwelling there, which is then more ſolid, and they are leſs incommoded with the water, in which they are capable of continuing but a ſhort time; but if they are not favoured with this advantage, they drive ſtakes into the earth with their teeth to fortify the building againſt the winds and water. At the bottom they ſtrike the two openings to the ſtream; one conducts them to the place where they bathe, and which they always keep very decent; the other is a paſſage to that quarter, where they carry out every thing that would ſoil or rot the upper apartments. There is a third aperture much higher, calculated to prevent their being ſhut up, when the ice hath cloſed the openings into the lower lodgments. They ſometimes build their houſes entirely on dry land, and ſink ditches, five or ſix feet deep, in order to deſcend to the water. They employ the ſame materials and induſtry in the ſtructure of their dwellings, as they uſe for their cauſey. The walls of the building are perpendicular, and two feet thick. As their teeth are more ſerviceable than ſaws, they cut off all the projections from the wood that ſhoot out beyond the perpendicular of the wall; after which they work up a mixture of clay and dry graſs into a kind of mortar, with which, by the aid of their tails, they rough-caſt the out and inſides of the work. The edifice is vaulted within, and generally riſes in an oval figure. The dimenſions are proportioned to the number of the intended inhabitants. Twelve feet in length, and ten in breadth, are ſufficient for eight or ten beavers. If the number encreaſes, they enlarge the place accordingly. It has been aſſerted for a truth, that there have been found above an hundred of theſe creatures in different lodgments communicating with one another: but theſe populous ſocieties are very rare, becauſe they are too unmanageable and tumultuous, and the beavers are generally better acquainted with their own intereſt. They aſſociate to the number of ten or twelve, and ſometimes a few more.

Merchants diſtinguiſh three ſorts of beavers, though they are all the ſkins of the ſame animal; the new beaver, the dry beaver, and the coat beaver.

The new beaver, which is alſo called white beaver, or Muſcovy beaver, becauſe it is commonly kept to be ſent to Muſcovy, is that which the ſavages catch in their winter hunting. It is the beſt and the moſt proper for making fine furs, becauſe it has loſt none of its hair by ſhedding.

The dry beaver, which is ſometimes called lean beaver, comes from the ſummer hunting, which is the time when theſe animals loſe part of their hair.

Though this ſort of beaver is much inferior to the other, yet it may alſo be employed in furs; but it is chiefly uſed in the manufacture of hats. The French call it ſummer caſtor, or beaver.

The coat beaver is that which has contracted a certain groſs and oily humour from the ſweat which exhales from the bodies of the ſavages who wear it for ſome time. Though this ſort be better than the dry beaver, yet it is uſed only in the making of hats.

*BEAUMONT (FRANCIS) a celebrated dramatic poet, who, in concert with Mr. Fletcher, wrote a great number of plays; he was the ſon of Francis Beaumont, one of the judges of the common-pleas, and was born at Grace Dieu, in Leiceſterſhire, about the year 1585 or 1586. He was educated at Cambridge, and afterwards admitted a ſtudent in the Inner Temple; but his fondneſs for the muſes would not ſuffer him to apply his thoughts to the ſtudy of the laws. He died in March, 1615, before he was thirty years of age.

Mr. Beaumont, beſides the plays in which he was jointly concerned with Mr. Fletcher, wrote a ſmall dramatic piece, intitled, A Maſque of Gray's Inn Gentlemen, and the Inner Temple, with ſeveral poems printed together, in octavo. Beaumont and Fletcher generally wrote in conjunction. The former was remarkable for the accuracy of his judgment, and the latter for the force of his imagination.

BEAUTY, a general term for whatever excites in us pleaſing ſenſations, or an idea of approbation. We may diſtinguiſh the motion annexed to beauty into ideas and ſenſations; the former of which poſſeſs the mind, the latter affect the heart. Thus an object may pleaſe the underſtanding without intereſting the ſenſes; and, on the other hand, agreeable ſenſations may be excited by objects, whoſe ideas have no claim to our approbation. In theſe diſtinctions the difficulty, or rather impoſſibility, of fixing a general characteriſtic of beauty conſiſts; becauſe the ideas and ſenſations of different perſons vary, according to their different turns of mind, and habitudes of body; and conſequently the relations of objects to thoſe ideas and ſenſations vary in the ſame manner. Hence ariſe the various opinions of beauty in women, painting, ſtatuary, &c.

BEAUTY, in architecture, painting, and other arts, is the harmony and juſtneſs of the whole compoſition taken together.

BECALMING, in navigation. When the wind is interrupted in its paſſage to a veſſel by any contiguous body, as land, a high ſea behind, or another ſhip, it is called becalming her, as the ſails at that time remain in a ſtate of reſt, and are deprived of their governing power.

*BECCLES, a town in Suffolk; it has a good market on Saturdays, and three fairs, on Aſcenſion-day, St. Peter, June 29, and October 2, for petty chapmen, as alſo on July 15, for toys. It is a large town, with a handſome church. Here the ſeſſions for the liberty of Blithing are commonly held. It is fifteen miles ſouth-weſt of Yarmouth, thirty-nine north-north eaſt of Ipſwich, and one hundred and nine north-eaſt of London. Long. 4. 30. E. Lat. 52. 28. N.

*BECKET (St. THOMAS) archbiſhop of Canterbury in the reign of king Henry II. was the ſon of Gilbert, a merchant of London, and Maud, a Saracen lady. He was born in London, in 1119, educated at Oxford, then at Paris, and afterwards ſtudied the civil law at Bononia, in Italy. On his return to England, he was made archdeacon of Canterbury, provoſt of Beverley, and prebendary of Lincoln and St. Paul's; and in 1158, he was made high chancellor, and preceptor to the young prince Henry. Becket now laid aſide the eccleſiaſtical habit, affecting the dreſs and manners of a courtier, and at the ſame time diſcharged the duties of his ſtation, ſo as to give entire ſatisfaction. In 1160, he was ſent by the king to Paris, to treat of a marriage between prince Henry, who was then but ſeven years old, and the king of France's daughter, then no more than three, in which negociation Becket ſucceeded, and returned with the young princeſs to England. He had not, however, been much above four years chancellor, before the king advanced him to the ſee of Canterbury; ſoon after which, he reſigned the office of chancellor, and exchanged the gaiety and luxury of a courtier for the gravity and auſterities of a monk. At the ſame time, he began vigorouſly to exert himſelf in defence of the pretended rights and privileges of the church, by proſecuting ſome of the nobility and others, for lands and poſſeſſions, he maintained, they had uſurped from the ſee of Canterbury; and as he proceeded with the greateſt turbulence and obſtinacy, he alienated from himſelf the minds of the king and nobility, and ſoon came to an open rupture with them; and growing more troubleſome than before, the king demanded the public money he had ſquandered away; upon which he fled in diſguiſe to a monaſtery in Flanders, and from thence went to France, where he iſſued out excommunications againſt various perſons who had oppoſed or violated the ſuppoſed rights of the church. This however only ſerved to exaſperate men's minds againſt him, and the king was ſo provoked at his excommunicating ſeveral of his great officers and immediate attendants, that he baniſhed all his relations. However, the king of France by his intreaties, and the pope by his perſuaſions and threats, at laſt brought about a reconciliation, and Becket returned to England, after an abſence of ſeven years. When the king had cauſed his ſon prince Henry to be crowned at Weſtminſter, by the archbiſhop of York; Becket prevailed on the pope to ſuſpend the archbiſhop, and excommunicate the biſhops who had aſſiſted him. Becket, therefore, almoſt as ſoon as he arrived, received an order from the young king to abſolve the biſhops that he had ſuſpended and excommunicated; but refuſing to comply, the archbiſhop of York, and the biſhops of London and Saliſbury, immediately carried their complaints to the old king, who was then in Normandy, and was ſo highly exaſperated at this freſh inſtance of his obſtinacy, that he could not forbear exclaiming with great warmth, "That he was very unfortunate to have maintained ſo many cowardly and ungrateful men in his court, none of whom would revenge him of the injuries he had ſuſtained from one turbulent prieſt." Theſe words were heard by four gentlemen of the court, who immediately formed a deſign againſt the archbiſhop's life, which they executed in the cathedral church at Canterbury, on the 29th of November, 1171. Upon this, all divine offices ceaſed in the church of Canterbury for one year wanting nine days, at the end of which, by order of the pope, it was conſecrated anew. Two years after, Becket was canonized; and the ſame year, a particular collect was appointed to be read in all the churches of the province of Canterbury, for expiating the guilt of his murder. The next year, Henry returning from France, went to Canterbury, where he did penance as a teſtimony of his grief for the murder. When he came within ſight of the church where the archbiſhop was buried, he alighted off his horſe, and walked barefoot, in the habit of a pilgrim, till he came to Becket's tomb, where, after he had proſtrated himſelf, and prayed a conſiderable time, he ſubmitted to be ſcourged by the monks, and paſſed all that day and night without any refreſhment, kneeling upon the bare ſtones; which done, he beſtowed great benefactions upon the church of Canterbury. In 1221, Becket's body was taken up, fifty years after his murder, in the preſence of king Henry III. and a great concourſe of the nobility and others, and depoſited in a rich ſhrine, erected at the expence of Stephen Langton, archbiſhop of Canterbury, which was ſoon viſited from all parts, and enriched with the moſt coſtly gifts and offerings. He was a man of great talents, of elevated thoughts, and of invincible courage; but of a moſt violent and turbulent ſpirit; exceſſively paſſionate, haughty, and vainglorious; in his reſolutions inflexible, in his reſentments implacable.

BED *of the Carriage of Cannon*, the thick plank that lies under the piece, and forming, as it were, the body of the carriage.

BED, in gardening, a piece of ground, raiſed a little above the level of the adjoining ground, and in which ſeeds are ſown, or plants ſet.

* BEDFORD, the county town of Bedfordſhire, is divided by the river Ouſe, ſo as to reſemble two towns, which are joined by a ſtone bridge, that has two gates to ſtop the paſſage when neceſſary. The market on the ſouth ſide, is on Tueſday for live cattle; and on Saturday, on the north ſide, for corn. The ſituation is low, and the houſes not extraordinary; and there is one ſtreet, which runs the whole length of the town, which is ſeven furlongs, and excels all the reſt. It has five churches, St. Peter's, St. Cuthbert's, and St. Paul's, on the north ſide of the river; and St. John's, and St. Mary's on the ſouth. It had a caſtle, which is now deſtroyed. Bedford is governed by a mayor, two bailiffs, a recorder, twelve aldermen, two chamberlains, a town clerk, and three ſerjeants. It ſends two members to parliament, and gives the title of duke to the noble family of the Ruſſel. It has ſix fairs, viz. on the firſt Tueſday in Lent, April 21, July 5, Auguſt 21, October 11, and December 19, all for cattle of every kind. A great part of Bedford priory is ſtill ſtanding in good repair, it being converted into private uſes, and now

belongs to the lord Aſhburnham. It is fifty-two miles north-by-weſt from London. Long. 0. 20. W. Lat. 52. 6. N.

* BEDFORDSHIRE, twenty-four miles long, and ſixteen broad, and is bounded on the north by Northamptonſhire and Huntingdonſhire, on the eaſt by Cambridgeſhire, on the weſt by Buckinghamſhire, and on the ſouth by Hertfordfordſhire. The principal river is the Ouſe. The air is temperate, clear, and healthy, and the ſoil fruitful. The commodities it produces are fuller's earth, cattle, veniſon, fowls, timber, wood, wheat, and barley; the chief manufactures are bone-lace and ſtraw hats; the principal towns are, Bedford, the county town, Dunſtable, Woburn, Ampthill, Leighton, Luton, Shefford, Biggleſwade, and Potton. The noblemens ſeats are Woburn-abbey, belonging to the Duke of Bedford; Wreſt-houſe, ſix miles ſouth of Bedford, belonging alſo to the duke of Bedford; Ampthill is now the duke of Bedford's; Luton Hoo, belonging to lord Bute; Bletſoe, to lord St. John; Hawnes, to lord Granville; and Bromhall to lord Trevor. This county ſends four members to parliament, two for the county, and two for Bedford. It is in the dioceſe of Lincoln; it contains five hundred and fifty villages, one hundred and ſixteen pariſhes, twelve thouſand, one hundred, and ſeventy houſes, and is computed to contain upwards of fifty thouſand inhabitants.

BEDS *of Minerals*, certain ſtrata or layers of matters diſpoſed over each other.

Lords of the BED-CHAMBER, ten lords, who attend in their turns each week, during which time they lie in the king's bed chamber, and wait upon him when he dines in private.

BEE, in natural hiſtory, a ſmall inſect, famous for its induſtry. The bee is divided by two ligaments, into three parts or portions, the head, the breaſt, and the belly. The head is armed with two jaws and a trunk, the former of which play like two ſaws, opening and ſhutting to the right and left. The trunk is long and taper, and extremely pliant and flexible, being deſtined by nature for the inſect to probe to the bottom of the flowers through all the impediments of their chives and foliage, and drain them of their treaſured ſweets; but were this trunk to be always extended, it would prove incommodious, and be liable to be injured by a thouſand accidents; it is therefore of ſuch a ſtructure, that, after the performance of its neceſſary functions, it may be contracted, or rather folded up; and beſides this, it is fortified againſt all injuries by four ſtrong ſcales, two of which cloſely ſheath it, and the two others, whoſe cavities and dimenſions are larger, encompaſs the whole. From the middle part or breaſt of the bee grows the legs, which are ſix in number: and at the extremity of the paws are two little hooks, diſcernible by the microſcope, which appear like ſickles, with their points oppoſite to each other. The wings are four, two greater and two ſmaller, which not only ſerve to tranſport them through the air, but, by the noiſe they make, to give notice of their departure and arrival, and to animate them mutually to their ſeveral labours. The hairs with which the whole body is covered, are of ſingular uſe in retaining the ſmall duſt that falls from the chives of the flowers, of which the wax is formed. The belly of the bee conſiſts of ſix rings, which ſlide over one another, and may therefore be lengthened or contracted at pleaſure; and the inſide of this part of the body contains the inteſtines, the bag of honey, the bag of poiſon, and the ſting. The office of inteſtines is the ſame as in other animals. The bag of honey is tranſparent as cryſtal, containing the ſweet juices extracted from flowers, which the bee diſcharges into the cells of the magazine for the ſupport of the community in winter. The bag of poiſon hangs at the root of the ſting, through the cavity of which, as through a pipe, the bee ejects ſome drops of this venemous liquor into the wound, and ſo renders the pain more exceſſive. The mechaniſm of the ſting is admirable, being compoſed of two darts, encloſed within a ſheath that tapers into a fine point, near which is an opening to let out the poiſon. The two darts are ejected through another aperture, which, being armed with ſeveral ſharp beards like thoſe of fiſh-hooks, are not eaſily drawn back again by the bee; and indeed ſhe never diſengages them if the wounded party happens to ſtart and put her into confuſion; but if one can have patience to continue calm and unmoved, ſhe clinches thoſe lateral points round the ſhaft of the dart, by which means ſhe recovers her weapon, and gives leſs pain to the perſon ſtung. The liquor which at the ſame time ſhe infuſes into the wound, cauſes a fermentation, attended with a ſwelling, which continues ſeveral days; but that may be prevented by immediately pulling out the ſting, and enlarging the puncture, to let the venemous matter have room to eſcape.

Let us now conſider the generation, polity and labours of theſe inſects, the true knowledge of which is very much owing to the modern invention of glaſs hives, through which all the ſecrets of the community are laid open to a curious obſerver. Any perſon who carefully examines a hive at different ſeaſons of the year, will diſtinguiſh three ſorts of bees; of which the far greater number are the common working bees, who do all the buſineſs of the hive, and ſeem to be neither male nor female. The working-bee is repreſented on (plate XI. *fig.* 4.) The ſecond ſort, called drones, are the males, are ſomewhat larger, (*fig.* 5.) have no ſting, nor even ſtir from the hive, but live upon the honey prepared by the others. The third ſort is a much larger and longer bodied bee, of which there is often but one in a hive, at leaſt, but one in every ſwarm or colony of young bees, who are from time to time detached from the hive in ſearch of another habitation. This large bee is what the ancients called the king, from the reſpect they always ſaw paid to it by the other bees; but, being the female, the moderns more properly give it the title of queen, or mother of the ſwarm. See *fig.* 6.

While the hive is ſufficient to contain the bees without inconvenience, the ſociety live peaceably together; but when their numbers are multiplied, ſo that their habitation is too ſmall, the young brood quit the place of their nativity, and fly in queſt of a new ſettlement. The ſwarm that goes out conſiſts of the common bees, under the conduct of one female or queen; or, if two queens come out of the ſame hive, then the body of common bees divide into two parts, each following one female, both parties, however, when they alight out of the air, uſually ſettle near each other on a branch of a tree; and then thoſe bees which form the ſmalleſt ſwarm go off, one by one, to the other cluſter, deſerting the queen they followed, who is at length murdered by her ſubjects. The ſwarm being thus united, and hanging down from the tree, the countryman, who is always vigilant on theſe occaſions, provides for their accommodation a hive rubbed with balm, thyme, and other odoriferous herbs, into which he gently bruſhes them from the branch, and carries them to a ſtand prepared for that purpoſe. All this the bees bear very patiently, and, after they are a little compoſed, begin to think of forming themſelves convenient apartments in their new habitation. When they begin this work, it is obſerved they divide themſelves into four parties, one of which is deſtined to the fields to provide materials for the ſtructure; the ſecond works upon thoſe materials, and forms them into a rough ſketch of the dimenſions and partitions of the cells; the third examines and adjuſts the angles, removes the ſuperfluous wax, poliſhes the work, and gives it its neceſſary perfection; and the fourth is employed in bringing proviſions to the labourers.

The form of the cells of the honey-comb is hexagonal, which figure, beſides what is common with a ſquare and equilateral triangle, has the advantage of including a greater ſpace within the ſame ſurface. See COMB.

The expedition of the bees in their labour is almoſt incredible; for, notwithſtanding the elegance and juſt proportions of the work, they are ſo indefatigable, that they will, in one day, finiſh a honey-comb, a foot long, and ſix inches broad, capable of receiving three thouſand bees. We have already obſerved, that the bees which build the cells work but a little while at a time; but it is different with regard to thoſe that poliſh them, for they work a long while, and with great expedition, never intermitting their labour, unleſs it be to carry out of the cell the particles of wax taken off in the poliſhing; and, to prevent this wax from being loſt, other bees ſtand ready to receive it from the poliſhers, and carry it to ſome other part, in order to its being employed.

Each comb has two rows of cells oppoſite to each other, which have their common baſes. The thickneſs of each comb is ſomething leſs than an inch; and, conſequently, the depth of each cell about five lines; but at the ſame time the breadth of each is little more than two.

All the combs are conſtructed with cells of this ſize, except a ſmall number, of others in ſome particular parts of the hive, which are larger, and appropriated to the lodging eggs, that afterwards become drones, or male bees.

There are alſo, in ſome parts of the hive, three or four cells bigger than the others, and conſtructed in a different manner. They are of a ſpheroidical figure open in the inferior part, and attached to the extremities of the combs.

When the cells are completed, the queen takes poſſeſſion of thoſe ſhe likes beſt to depoſit her eggs in, and the reſt are left to be filled with honey. She lays one egg in each cell, and ſometimes more than an hundred of thoſe eggs in a day; but what is ſtill more remarkable, ſhe lays thoſe eggs which are to produce common bees in cells of the common ſhape and ſize, thoſe that are to become drones, or males, in the cells of a larger ſize, and depoſits thoſe which are to become females, like herſelf, in the ſpheroidical cells already deſcribed.

Theſe eggs, after lying ſome time in the cells, are hatched into maggots, and fed with honey for ten or twelve days, after which the other bees cloſe up the cells with a thin piece of wax; and under this covering they become gradually transformed into bees, in the ſame manner as ſilkworms are into butterflies. Having undergone this change, the young bees pierce through their waxen doors, wipe off the humidity from their little wings, take their flight into the fields, rob their flowers of their ſweess, and are perfectly acquainted with every neceſſary circumſtance of their future conduct. As to the males or drones, which are deſtined only to propagate their ſpecies, they live very comfortably for about three months after they are hatched: but when that time is over, and the females are impregnated, the common bees either kill them, or drive them from the hive, as burdenſome to the community, and not a drone is to be found till the next ſeaſon.

The method in which the bees collect their wax and honey deſerves to be a little explained. At the bottom of all flowers there are certain glands which contain more or leſs honey, that is, the moſt exalted particles of the ſugary juices of the plant. Theſe juices the bee ſucks up with her proboſcis or trunk abovementioned, and draws it into its mouth; and when it has thus takenn a ſufficient quantity into its ſtomach, it returns to the hive, and diſcharges the honey into the common magazine.

When the cells prepared to receive it are full, the bees cloſe up ſome with wax till they have occaſion for the honey; the reſt they leave open, to which all the members of the ſociety reſort, and take their repaſt with a very inſtructive moderation.

Wax is compoſed of the farina, or duſt, formed on the apices of flowers. This the bees collect, and with their fore-feet and jaws, roll up into little balls, which they convey one at a time, to the feet of their middle legs, and from thence to the middle joint of their hind legs, where there is a ſmall cavity like a ſpoon, to receive the burden. When thoſe bees, who are employed in collecting the wax, return to the hive, they are aſſiſted by their companions in diſcharging their load, who by little and little pick off the wax from their legs, and convey it to the common treaſure. With this they build their combs, obſerving a wonderful frugality, not the leaſt grain of it being waſted or neglected.

Conſidering the advantages ariſing from the labours of bees, is it not ſtrange that our country-people are not more ſolicitous about the preſervation and increaſe of theſe animals? It is certain they would multiply prodigiouſly with proper management; and we might, upon a moderate computation, have five thouſand times as much wax and honey produced in this kingdom as we have at preſent. Some attempts of this kind have already been made in our own country, and there is not the leaſt reaſon to doubt but they will, if purſued, be attended with ſucceſs.

Deſcription of Mr. Thorley's BEE-HIVE. This ingenious and aſſiduous gentleman, having, from near ſixty years experience, found that his bee-hives would be productive of much greater profit to the owners of bees, and alſo render that cruel and ungenerous practice of deſtroying theſe animals not only unneceſſary, but pernicious, preſented a bee-hive of this conſtruction to the Society of Arts, &c. in the Strand, who readily purchaſed another of his hives filled with honey, &c. that they might be inſpected by the curious, and brought into univerſal uſe; and from this bee-hive the view on plate XII. *fig.* 1. was drawn. The Society, perſuaded that the invention would prove of the greateſt advantage to this country, have publiſhed a premium of two hundred pounds, in order to introduce either Mr. Thorleys, or ſome other method of a ſimilar kind, whereby much larger quantities of honey and wax might be procured, and, at the ſame time, the lives of theſe laborious and uſeful inſects preſerved.

The bottom part, marked A, is an octangular bee-box, made of deal boards, about an inch in thickneſs, the cover of which is about 17 inches in diameter, but the internal part only 15½, and its height 10 inches. In the middle of the cover of this octangular box is a hole, which may be opened or ſhut at pleaſure, by means of a ſlider *d*. In one of the pannels is a pane of glaſs, covered with a wooden door, *b*. The entrance, *a*, at the bottom of the box, is about three inches and a half broad, and half an inch high. Two ſlips of deal, about half an inch ſquare, croſs each other in the center of the box, and are faſtened to the pannels by means of ſmall ſcrews. To theſe ſlips the bees faſten their combs.

In this octangular box the bees are hived, after ſwarming in the uſual manner, and there ſuffered to continue till they have built their combs, and filled them with honey, which may be known from opening the door, and viewing their works through the glaſs pane, or by the weight of the hive. When the bee-maſter finds his laborious inſects have filled their habitation, he is to place a common bee-hive of ſtraw, repreſented at B, made either flat at the top, or in the common form, on the octangular box, and draw out the ſlider, by which a communication will be opened between the box and the ſtraw hive; the conſequence of which will be, that thoſe laborious inſects will fill this hive alſo with the product of their labours. When the bee-maſter finds the ſtraw hive is well filled, he may puſh in the ſlider, and take it away, placing another immediately in its room, and then draw out the ſlider. Theſe indefatigable creatures will then fill the new hive in the ſame manner. By proceeding in this method, Mr. Thorley aſſured the Society, that he had taken three ſucceſſive hives, filled with honey and wax, from one ſingle hive, during the ſame ſummer; and that after he had laid his inſects under ſo large a contribution, the food ſtill remaining in the octangular box, was abundantly ſufficient for their ſupport during the winter. He added, that if this method was purſued in every part of the kingdom, inſtead of that cruel method of putting the creatures to death, he was perſuaded, from long experience, that wax would be collected in ſuch plenty that candles might be made with it, and ſold as cheap as thoſe of tallow are at preſent.

Mr. Thorley has alſo added another part to his bee-hive, which cannot fail of affording the higheſt entertainment to a curious and inquiſitive mind. It conſiſts of a glaſs receiver, repreſented at D, 18 inches in height, 8 inches in diameter at the bottom, and in the greateſt part 13. This receiver has a hole at the top, about an inch in diameter, through which a ſquare piece of deal E is extended to nearly the bottom of the veſſel, having two croſs bars to which the bees faſten their combs. When the bees have filled the ſtraw hive, (which muſt have a hole in the center C, covered with a piece of tin) Mr. Thorley places the glaſs-receiver upon the top of the ſtraw hive, and draws out the piece of tin: the bees, now finding their habitation enlarged, purſue their labours with ſuch alacrity, that they fill this glaſs hive likewiſe with their ſtores. And as this receptacle is wholly tranſparent, the curious obſerver may entertain himſelf with viewing the whole progreſs of their works. One of the hives, now depoſited at the Society's rooms in the Strand, is filled with the produce of the labours of thoſe inſects; and the glaſs hive is ſuppoſed to contain near thirty pounds of honey. See a further account of managing theſe uſeful creatures, and the nature of their productions, under the articles, SWARM, HIVE, HONEY, WAX, &c.

BEE-BREAD, a ſubſtance found in the cells of bees, and which is thought neceſſary to their ſubſiſtence. It is nothing more than wax itſelf unprepared.

BEECH, *Fagus*, a large and beautiful tree, whoſe leaves reſemble thoſe of the horn-beam: the male flowers grow together in a round bunch, and are produced at remote diſtances from the fruit on the ſame tree: the fruit conſiſts of two or three triangular nuts, which are incloſed in a rough hairy rind, divided into four parts.

This tree is propagated by ſowing the maſt; the ſeaſon for which is any time from October to February; only obſerving to ſecure the ſeeds from vermin, when early ſowed; which, if carefully done, the ſooner they are ſown the better, after they are fully ripe: a ſmall ſpot of ground will be ſufficient to raiſe a great number of thoſe trees from the ſeeds; but you muſt be very careful to keep them clear from weeds; and if the plants come up very thick, you ſhould not fail to draw out the ſtrongeſt of them the autumn following, that thoſe left may have room to grow: ſo that, if you huſband a ſeed-bed carefully, it will afford a three years draught of young plants, which ſhould be planted in a nurſery; and if deſigned for timber-trees, at three feet diſtance row from row; and eighteen inches aſunder in the rows. But if they are deſigned for hedges (to which the tree is very well adapted), the diſtance need not be ſo great; two feet, row from row, and one foot in the rows will be ſufficient. In this nurſery they may remain two or three years, obſerving to clear them from weeds, as alſo to dig up the ground between their roots, at leaſt once a year, that their tender roots may the better extend themſelves each way; but be careful not to cut or bruiſe their roots, which is injurious to all young trees: and never dig the ground in ſummer, when the earth is hot and dry;

which, by letting in the rays of the ſun to the roots, is often the deſtruction of young trees.

BEECH-MAST, the fruit of the beech-tree, excellent for the fattening of hogs, &c.

BEER, a well known liquor, made with malt and hops, and uſed in thoſe parts of Europe where vines will not grow. See MALT, BREWING, &c.

It is chiefly diſtinguiſhed from ale, by the quantity of hops, which is greater in beer, and thereby renders the liquor bitterer and fitter to keep. There are various differences in beers, proceeding from the ways of brewing, from the different countries or climates, from the water that is uſed, from the time ſpent about them, from the ingredients made uſe of, and the proportions of theſe ingredients. That beer is reckoned the beſt which is clear, and of a pale colour, of a pungent and agreeable taſte, that ſparkles upon being poured into a glaſs, and is neither too old nor too new.

Bottling of BEER is beſt performed in this manner: firſt, take clear water, or ſuch as has been well impregnated with the eſſence of ſome herb; to every quart of which add half a pound of ſugar. Afterwards, having cauſed this water to be gently boiled and ſcummed, add a few cloves: let it cool in order to have barm or yeaſt put to it, and being brought to work, take off the ſcum again: that done, while it is in a ſmiling condition, put three ſpoonfuls into each bottle, which is to be filled up with beer, and ſecurely corked. A few cryſtals of tartar do alſo very well in bottled beer; eſpecially if a few drops of the eſſence of barley, wine, or ſome eſſential ſpirits be added.

BEER-MEASURE. See MEASURE.

BEESTINGS, a term uſed by country people for the firſt milk taken from a cow after calving.

BEET, *Beta*, in botany. Different ſorts of this plant are cultivated in our culinary gardens; a whitiſh-leaved called *ſicula*, or *cicla*, a green-leaved, and a reddiſh-leaved, all with thick white roots; and a long-rooted, and a turnip-rooted, all over red. They are all biennial.

The juice, both of the roots and the leaves of the red and white beets, ſnuffed up the noſe, proves a powerful errhine, occaſioning a copious diſcharge of mucus, without provoking ſneezing.

Mr. Marggraf obſerves, that a good ſugar is obtainable from the juice of the freſh roots, by the method practiſed abroad for preparing it from the ſugar-cane. All kinds of beet, whether white or red, ſhould be ſown in March, in a deep and light ſoil. The former is cultivated for its leaves, and the latter is eſteemed for its root, which, when boiled, cold, and cut into thin ſlices, makes a grateful mixture with winter ſallads. The reddeſt and largeſt roots are the tendereſt and moſt eſteemed: conſequently the principles of the new huſbandry are extremely applicable to this plant; and we have accordingly been told that M. de Chateauvieux had beet roots, managed this way, which meaſured from five to ſixteen inches in diameter towards their top, or thickeſt part, though raiſed in a common field, and cultivated only with the horſe-hoe. The beet roots will be fit for uſe in autumn, and will continue good all the winter; but they will begin to grow hard and ſtringy in the ſpring, when they will begin to ſhoot. The ſeeds of this plant, by which only it is propagated, ripen about the end of Auguſt, or in the beginning of September. They are round, rough, and about the bigneſs of a middling pea. To obtain them in perfection, ſome of the fineſt roots that have been preſerved from the winter's froſts are replanted in March, and let run up to ſeed. The kitchen-gardeners about London, in order to ſave ground, frequently ſow the red beet with carrots, parſnips, or onions, and afterwards draw up their carrots and onions when they are young, to make room for the growth of the beet: but, unleſs they pull them up very young indeed, it is much better to ſow the beet ſeparately.

BEETLE, *Scarabæus*, in the hiſtory of inſects. See SCARABÆUS.

BEETLE, a wooden inſtrument for driving piles, &c.

It is likewiſe called a ſtamper; and by paviors a rammer.

BEGLEBERG, a governor of one of the principal governments in the Turkiſh empire. They are become almoſt independent, and have under their juriſdiction ſeveral ſangiacs, or particular governments, and beys, agas, and other officers who obey them.

BEGUINS, congregations of devout young women, who maintain themſelves by the work of their hands, leading a middle kind of life between the ſecular and religious. Theſe ſocieties conſiſt of ſeveral houſes placed together in one incloſure, with one or more churches, according to the number of beguins. There is in every houſe a prioreſs, without whoſe leave they cannot ſtir out. Their vow is conceived in theſe terms : " I promiſe to " be obedient and chaſte, as long as I con- " tinue in this beguinage." They obſerve a three years noviciate, before they take the habit, and the rector of the pariſh is the ſuperior, but can do nothing without the advice of eight beguins. They are eſtabliſhed in ſeveral parts of Flanders.

* BEHEADING a nobleman was firſt introduced into England, in 1074, Roger, earl of Hereford, being the firſt that was executed in that manner.

BEHEN, in pharmacy, a name appropriated to two roots, very different from one another in ſhape, colour, and their whole external appearance, and diſtinguiſhed by the names of white and red behen.

We have them both from the Levant, and the ſame virtues are attributed to both kinds ; but the white is ſuppoſed to poſſeſs them in the greateſt degree ; they are ſaid to be great cordials and reſtoratives, and to be good in nervous complaints.

BEL, or BELUS, the ſupreme god of the ancient Chaldeans or Babylonians. He was the founder of the Babylonian empire, and is ſuppoſed to be the Nimrod of Scripture, and the ſame as the Phœnician Baal.

BELEMNITES, in natural hiſtory, a kind of foſſil ſubſtance, with regard to whoſe origin naturaliſts are divided. It is generally called the thunder-bolt.

The ſhape of the belemnites is ſometimes conical, ſometimes cylindrical, and commonly conſiſts of a black and horny ſubſtance.

They are found in all ſorts of ſtrata, in clay, gravel, beds of ſtone, and often in looſe flints. They are ſometimes found covered with a ſparry cruſt of a different texture from the body of the maſs.

* BELGRADE, a city of Turky, in Europe, and the capital of Servia, ſeated at the confluence of the Save and the Danube. The Danube is very rapid near this city, and its waters look whitiſh. This city is built on a hill, and was once large, ſtrong, and populous. The ſuburbs are very extenſive, and reſorted to by Turkiſh, Jewiſh, Greek, Hungarian, and Sclavonian merchants. The ſtreets where the greateſt trade is carried on is covered with wood, to ſhelter the dealers from the ſun and rain. The rivers render it very convenient for commerce, and as the Danube falls into the Black Sea, the trade is eaſily extended to diſtant countries, which renders it the ſtaple town in theſe parts : and as that river runs up to Vienna, they ſend goods from thence with a great deal of eaſe. The Armenians have a church here, and the Jews a ſynagogue ; the ſhops are but ſmall, and the ſellers ſit on tables, diſpoſing of their commodities out of a window ; for the buyers never go on the inſide. There are two exchanges built with ſtone, and ſupported with pillars, not unlike the Royal Exchange at London. There is likewiſe a caravanſera or public inn, and a college for young ſtudents. It has been taken backwards and forwards by the Turks and Imperialiſts ſeveral times ; but was ceded to the Turks, in 1739, and the fine fortifications demoliſhed. It is three hundred and forty miles ſouth-eaſt of Vienna, and four hundred and fifty north-weſt of Conſtantinople. Long. 21. 2. E. Lat. 45. 10. N.

* BELIDES, in fabulous hiſtory, the fifty daughters of Danaus, who were alſo called Danaides. Danaus quarrelling with his brother Ægyptus, the latter propoſed a reconciliation, by marrying his fifty ſons to their couſin germans the Belides ; to this Danaus conſented ; but being told by an oracle, that he ſhould be diſpoſſeſſed of his kingdom by a ſon-in-law, he directed his fifty daughters to kill their huſbands on the firſt night of their marriage. This advice they all of them followed, except Hypermneſtra, who ſuffered her huſband Lyncæus to eſcape, who afterwards dethroned Danaus. For this crime, the reſt of the Belides were puniſhed in Tartarus, by being condemned to the endleſs labour of pouring water into a veſſel full of holes.

BELIEF, a perſuaſion or ſtrong aſſent of the mind to any propoſition ; but, in a more reſtrained and technical ſenſe, that kind of aſſent which is founded on the authority or teſtimony of ſome perſons atteſting the truth of any matter propoſed.

BELIEF is generally diſtinguiſhed into divine and human, not with regard to the propoſition believed, but with regard to the teſtimony on which we believe it. When God reveals any thing to us, this gives us the teſtimony of divine belief. See FAITH.

But what man only acquaints us with, produces only a human belief. See EVIDENCE.

BELL, a well known machine, ranked by muſicians among the muſical inſtruments of percuſſion. The metal of which it is made, is a compoſition of tin and copper : the proportion of one to the other is about twenty pounds of pewter or twenty-three pounds of tin, to one hundred weight of copper. Bell-metal is prohibited to be imported. The uſe of bells was not known in the Eaſtern church till the year 865, when Urſus Patriſiacus, duke of Venice, made a preſent of ſome to Michael, the Greek emperor, who firſt built a tower to the church of Sancta Sophia, to hang them in. Who firſt brought bells into uſe in the Latin church, is a thing not yet determined; ſome aſcribing them to pope Sabinianus, ſucceſſor of St. Gregory, in the year 604; and others to Paulinus, biſhop of Nola, cotemporary with St. Jerom: but the latter opinion ſeems to be a vulgar error, and to have no better foundation than Paulinus's being biſhop of Nola in Campania, where it is pretended bells were firſt invented, and thence called Nolæ and Campanæ. Cardinal Bona would have it thought, that they began to be uſed in the Latin church immediately upon the converſion of the emperors to Chriſtianity, becauſe the tintinnabula, or leſſer ſort of bells, had been uſed before by the heathens to the like purpoſe: but there is no ancient author that countenances his conjecture.

Diving BELL. See DIVING.

BELL-FOUNDERY. See FOUNDERY.

BELL-FLOWER, *Campanula*, in botany; ſee CAMPANULA.

BELL-WEED, *jacea nigra*, in botany; ſee JACEA.

BELLA-DONNA, in botany, a genus of the pentandria-monogynia claſs of plants, called by Linnæus atropa.

* BELLE-ISLE, a iſland of France, on the coaſt of Britany, about thirteen miles in length, and five in breadth; and was made a duchy, in 1742, in favour of marſhal Belleiſle. It has a mixture of craggy rocks, ſalt-works, and fertile land; it contains four pariſhes, has a good citadel, and a convenient port. It was taken by the Engliſh at the expence of many lives, on the 7th of June, 1761; but was reſtored to the French by the late treaty of peace. Long. 3. 5. W. Lat. 47. 20. N.

BELLING *of Hops* denotes their opening and expanding themſelves. See HOPS.

BELLIS, Daiſy, in botany, a genus of plants, divided into almoſt fifty ſpecies, from the variations in the colour and duplicature of the flowers.

There are two ſpecies of this plant uſed in medicine, diſtinguiſhed by the epithets major and minor. The former is perennial, grows wild in corn and paſture grounds, and flowers in May and June. The leaves of this plant have been recommended in diſorders of the breſt both aſthmatical and phthiſical, and as diuretics. Geoffroy relates, that the herb, gathered before the flowers have come forth, and boiled in water. imparts an acrid taſte, penetrating and ſubtile like pepper; and that this decoction is an excellent diuretic and vulnerary.

BELLIS *Minor*, the common daiſy, is alſo perennial, common almoſt every where, and flowers early in ſpring. This plant ſtands recommended as a vulnerary, detergent, and reſolvent, in diſeaſes of the breaſt, internal bruiſes, hypochondriacal complaints, and diſorders proceeding from the drinking of cold liquors when the body has been much heated. Schrœder informs us, that the leaves and flowers looſens the belly.

The leaves, which have been chiefly made uſe of, are in taſte ſlightly acrid. The roots are conſiderably ſtronger, of a ſubtile penetrating pungency, not hot or fiery, and, though at preſent diſregarded, promiſe to be a medicine of no ſmall virtue.

BELLON, a diſtemper common in countries where they ſmelt lead ore; as alſo among plumbers and painters. It is attended with languor, intollerable pains and ſenſations of gripings in the belly, and generally coſtiveneſs. Beaſts, poultry, &c. as well as men, are ſubject to this diſorder: hence a certain ſpace round the ſmelting-houſes is called bellon-ground, becauſe it is dangerous for an animal to feed upon it.

The cure of this diſeaſe depends principally on cleanſing the primæ viæ, or the firſt paſſages: and therefore, after bleeding ſuch patients, if they are plethoric, a vomit of emetic wine or tartar ſhould be given; which muſt be a doſe double to what would vomit another perſon, otherwiſe it would have no effect, eſpecially when the diſeaſe is violent, or has continued long.

Vomits and purgatives ought to be repeated at proper intervals, till the uneaſineſs in the ſtomach and guts from the diſeaſe is gone. At the ſame time, emollient, anodyne, and laxative clyſters are frequently to be injected for emptying the inteſtines, if the purgatives do not perform their duty.

When blood or matter are paſſed with the fæces, the emetics and purgatives are to be diſcontinued. The hot bath is alſo of the utmoſt ſervice in this terrible diſeaſe, and ſeems indeed to be the laſt reſource.

BELLONA, the pagan goddeſs of war. Some make her the mother, others the ſiſter, and others the wife of Mars. Heſiod ſays, ſhe was the daughter of Phorcys and Ceto. As the ſun, among other names, is ſuppoſed to have been worſhipped under that of Mars, ſo it is probable Bellona repreſented the moon. This deity had a temple at Rome, near the Circus Flaminius, before which ſtood the column of War, from whence the conſul threw his lance, when he declared war againſt any king or nation. It was founded by Appius Claudius the blind, who was conſul in the year of Rome 457. Cambden remarks, that there was in the city of York a temple of Bellona, in the time of the emperor Severus: for Spartian, ſpeaking of that city, relates, that Severus, coming thither, and intending to offer ſacrifice, was conducted to the temple of Bellona by the miſtake of an ignorant augur.

BELLONARII, in Roman antiquity, the prieſts of Bellona.

BELLONIA, in botany, a genus of plants.

BELLOWING, among ſportſmen, the noiſe of roes in rutting-time.

BELLOWS, a machine ſo contrived as to agitate the air with great briſkneſs, expiring and inſpiring the air by turns, and that only from enlarging and contracting its capacity.

This machine is uſed in chambers and kitchens, in forges, furnaces, and founderies, to blow up the fire: it ſerves alſo for organs and other pneumatic inſtruments, to give them a proper degree of air: all theſe are of various conſtructions, according to the different purpoſes for which they are intended.

BELLY, in anatomy, that which is more uſually called abdomen, or rather the cavity of the abdomen. See ABDOMEN.

BELOMANCY, a ſort of divination by means of arrows, practiſed in the eaſt, and particularly in Arabia.

BELT, *Balteus*, in the military art, a leathern girdle for ſuſtaining the arms, &c. of a ſoldier.

BELTS, in aſtronomy, two zones, or girdles, ſurrounding the body of the planet of Jupiter, more lucid than the reſt, and of unequal breadth. See JUPITER.

BELVIDERE, in the Italian architecture, a pavilion on the top of a building, or an artificial eminence in a garden; the word literally ſignifying a fine proſpect.

* BENBOW (JOHN) one of the moſt eminent Engliſh admirals, mentioned in our hiſtories, was born about the year 1650, of a very ancient and honourable family in Shropſhire. His father left him no other proviſion than the profeſſion of a ſailor, but before he was thirty, he became maſter, and in a great meaſure owner, of a ſhip, called the Benbow frigate, employed in the Mediterranean trade, during which time the following remarkable incident brought him to ſerve in the Britiſh navy. In 1686 he was attacked in his paſſage to Cadiz by a Sallee rover, againſt whom he defended himſelf with a very unequal number of men, with the utmoſt bravery, till at laſt the Moors boarded him, but were quickly beat out of the ſhip again, with the loſs of thirteen men, whoſe heads he ordered to be cut off, and thrown into a tub of pork pickle. After the Revolution, captain Benbow was employed in protecting our trade in the channel, and bombarding the French ports, in which he ſhewed the moſt intrepid bravery, by going in perſon in his boat to encourage and protect the engineers, and his vigour and activity ſo effectually recommended him to king William, that he was early promoted to a flag. After the peace, he was ſent with a ſquadron into the Weſt-Indies, when he obliged the governor of Carthagena to reſtore two Engliſh ſhips that had been ſeized by the Spaniards; and afterwards, ſailing to Porto Bello, forced the governor, by his threats, to ſend him ſeveral veſſels which had been taken under the pretence that the ſettlement of the Scots at Darien was a breach of the peace. Upon the war breaking out a-freſh, he was again ſent into the Weſt-Indies, where he diſtinguiſhed himſelf by a memorable engagement againſt the French fleet, commanded by admiral Du Caſſe, on the 19th and 20th of Auguſt, 1702, near the coaſt of St. Martha, in which he had one of his legs ſhattered to pieces by a cannon-ſhot, and after its being dreſſed, he was carried up and placed with his cradle on the quarter-deck; but when he had a moral certainty of taking or deſtroying the whole French ſquadron, he had the vexation of loſing this victory by the cowardice of ſeveral of his captains, who baſely refuſed to continue the fight, and ſigned a paper, importing that they were reſolved to deſiſt. He oppoſed this reſolution, ſo injurious to the honour of

the nation, to the utmoſt of his power, and on his arrival at Jamaica, ordered the officers who had behaved in this ſcandalous manner to be confined, and a court-martial being held for their trial, ſome of the guilty were condemned, and ſuffered according to their deſerts. This brave commander died at Jamaica, of a conſumption, occaſioned by the cutting off his leg, on the 4th of November, 1702.

BENCH, or BANC, in law; ſee Banc.

Free BENCH ſignifies that eſtate in copyhold lands, which the wife, being eſpouſed a virgin, has after the deceaſe of her huſband for her dower, according to the cuſtom of the manor.

BENCHERS, in inns of court, the ſenior members of the ſociety, who are inveſted with the government thereof.

BEND, in heraldry, one of the nine honourable ordinaries, containing a third part of the field when charged and a fifth when plain. It is ſometimes, like other ordinaries, indented, ingrailed, &c. and is either dexter or ſiniſter.

BEND *Dexter* is formed by two lines drawn from the upper part of the ſhield on the right, to the lower part of the left, diagonally. It is ſuppoſed to repreſent a ſhoulder belt, or a ſcarf, when worn over the ſhoulder.

BEND *Siniſter* is that which comes from the left ſide of the ſhield to the right; this the French heralds call a barre.

BENDING, amongſt ſeamen, the faſtening two ends of rope to one another; to faſten a ſail to its yard or ſtay; to fix the cable to the anchor. See Cable, Clench, Sail.

BENDS, in naval architecture, the thickeſt and ſtrongeſt planks in a ſhip, reaching from end to end at her extreme breadth.

BENDY, in heraldry, the field divided into four, ſix, or more parts diagonally, and varying in metal and colour.

BENEDICTINES, in church hiſtory, an order of monks who profeſs to follow the rules of St. Benedict. In the canon law, they are ſtyled black-friars, from the colour of their habit. The rules of St. Benedict, as obſered by the Engliſh monks before the diſſolution of the monaſteries, were as follow: They were obliged to perform their devotions ſeven times in twenty-four hours, the whole circle of which devotions had a reſpect to the paſſion and death of Chriſt; they were obliged always to go two and two together. Every day in Lent they were obliged to faſt till ſix in the evening, and abated of their uſual time of ſleeping and eating; but they were not allowed to practiſe any voluntary auſterity without leave of their ſuperior: they never converſed in their refectory at meals, but were obliged to attend to the reading of the Scriptures; they alſo ſlept in the ſame dormitory, but not two in a bed; they lay in their cloths; for ſmall faults they were ſhut out from meals; for greater, they were debarred religious commerce, and excluded from the chapel; and as to incorrigible offenders, they were excluded from the monaſteries. Every monk had two coats, two cowls, a table-book, a knife, a needle, and a handkerchief; and the furniture of their bed was a mat, a blanket, a rug, and a pillow.

BENEDICTION, or BLESSING. The privilege of benediction was one of thoſe early inſtances of honour and reſpect paid to biſhops in the primitive church. The cuſtom of bowing the head to them, and receiving their bleſſings, was become univerſal. In the weſtern churches there was anciently a kind of benediction which followed the Lord's prayer; and after the communion the people were diſmiſſed with a benediction.

BENEFICE, *Beneficium*, a church endowed with a revenue for the performance of divine ſervice; or the revenue itſelf aſſigned to an eccleſiaſtical perſon, by way of ſtipend, for the ſervice he is to do that church. All ſuch preferments, except biſhoprics, are called benefices; and all benefices are, by the canoniſts, ſometimes ſtiled dignities; but we now ordinarily diſtinguiſh between benefice and dignity, applying dignity to biſhoprics, deaneries, archdeaconries, and prebendaries; and benefice to parſonages, vicarages, and donatives. Benefices are divided by the canoniſts into ſimple and ſacerdotal; in the firſt there is no obligation but to read prayers, ſing, &c. the ſecond are charged with the cure of ſouls, or the direction and guidance of conſciences: ſuch are vicarages, rectories, &c. The Romaniſts again diſtinguiſh benefices into regular and ſecular. Regular or titular benefices are thoſe held by a religious, or a regular, who has made profeſſion of ſome religious order: ſuch are abbies, priories, conventuals, &c. or rather a regular benefice is that which cannot be conferred on any but a religious, either by its foundation, by the inſtitution of ſome ſuperior, or by preſcription: for preſcription, forty years poſſeſſion by a religious makes the benefice regular. Secular benefices are only ſuch as are to be given to ſecular prieſts, that is, to ſuch as live in the world, and are not engaged in any monaſtic order. All benefices are reputed ſecular, till the contrary is made to appear. They are called ſecular benefices becauſe held by ſeculars; of which kind are almoſt all cures. A benefice is vacated either by the natural death, or reſignation of the incumbent, or the commiſſion of ſome crime, as concubinage, perjury, ſimony, hereſy, &c.

A BENEFICE *in Commendam* is that, the direction and management of which, upon a vacancy, is given or recommended to an eclceſiaſtic for a certain time, till he may be conveniently provided for. See REGULAR and SECULAR.

* BENGAL, a large kingdom in the Eaſt-Indies, ſeated on a gulph of the ſame name. It is three hundred and ninety miles in length, and two hundred and thirty in breadth. It is now ſubject to the great mogul. It is bounded on the north by the provinces of Patna and Jeſuat; on the eaſt by the kingdoms of Tipra and Arracan; on the ſouth by the bay of Bengal; and on the weſt by the province of Orixa. It is a very plentiful country, and is overflowed by the Ganges as Egypt is by the Nile. The chief towns are Daca, which is the ſeat of the viceroy; Coſſambar and Hughly, or Hughgeli, are towns of good trade on the river; Chatigan, near the eaſtern branch of the river, is a very large populous city, and has alſo a very good trade.

Bengal is a very fruitful country, and well watered, not only by the Ganges, but by canals cut out of it. On the banks of theſe grow pulſe, muſtard-ſeed, ſeſamums, of which they make oil, and little mulberry-trees to feed their ſilk-worms, which ſupply them with ſilk for their manufactures, which are exceeding good, they have likewiſe aloes, ſalt-petre, gum-lac, opium, wax, muſk, long pepper, ginger, and butter; it ſends vaſt quantities of rice every year to the Moluccas, Sumatra, Malabar, Coromandel, the Maldivia iſlands, Ceylon, and Goa; as alſo ſugar to Golconda, Carnate, Arabia, Irak Arabi, and Perſia; beſides muſlins, cottons, callicoes, ſilks called Bengals, elaches, and herba-ſtuffs, indico, and canes to Europe.

They have almoſt continual rains in Bengal, from April to September; this cauſes the Ganges to overflow, which does great ſervice, and ſometimes a great deal of miſchief; during the other ſix months, the weather is fair and pretty cool, by the blowing of the north-eaſt wind: but in December, January, and February, the mornings are foggy and cold. Their ſhorteſt day is eleven hours long, and their harveſt is at that time of the year.

They have plenty of freſh and ſalt fiſh, fowls, ducks, and geeſe, which are exceeding cheap; ſheep, kids, and pork are the chief food of the Europeans, the food of the common people is pulſe, rice, butter, and boiled fiſh; they uſe banana leaves for their napkins, and the ground for their table.

BENZOINE, or ASA-DULCIS, in the materia medica, a gum reſin, approaching the neareſt to ſtorax in fragrancy. The tree which produces benzoine is a native of the Eaſt-Indies, particularly of the iſlands Siam and Sumatra. It has ſoft thin leaves, nearly like thoſe of the citron-tree, and bears a round fruit about the ſize of a hazel-nut. It is never permitted to exceed the ſixth year, as being after this period unfit for yielding reſin; the inhabitants then cut it down, and ſupply it by a young one raiſed commonly from the fruit. One tree does not yield above three pounds of benzoine. The juice exudes, from inciſions, in form of a thick white balſam: if collected as ſoon as it has grown ſomewhat ſolid, it proves internally white like almonds; and hence is called benzocanygdaloides: if ſuffered to lye long expoſed to the ſun and air, it changes more and more to a browniſh, and at laſt to a quite reddiſh brown colour. The dealers in this commodity never ſell us the fine white benzoine by itſelf; but mix it with the inferior and fouler kinds, that one may carry off the other: hence, in the very beſt benzoine of the ſhops, we meet with pieces of various colours, white, yellowiſh white, yellow, browniſh yellow, brown, reddiſh brown, and grey, all united into one lump. The dark coloured benzoine however, if it is free from earthy and woody impurities, and from admixtures of any other reſin, does not appear to be inferior in goodneſs to the white. *Newman's Chemiſtry*. Benzoine and its flowers are employed medicinally for reſolving and attenuating viſcid juices, particularly in diſorders of the breaſt: but the principal uſe of this fragrant reſin is in perfumes, and as a coſmetic, for ſoftening and ſmoothing the ſkin.

BER, in botany, that ſpecies of the jugube-tree which produces the gum lacca See JUGUBE.

BERAMS, a coarſe cloth, all made of cotton thread, which comes from the Eaſt Indies, and particularly from Surat. There are white plain berams, and others ſtriped with colours.

BERBERIS, *Barberry*, in botany, a large prickly buſh, under which lies another of a deep yellow; ſmall, ſmooth, ſomewhat oval, pale green leaves, finely ſerrated about the edges; and yellow monopetalous flowers, ſtanding in cluſters on the tops upon naked footſtalks, followed by oblong red berries, containing each generally two ſeeds: ſome of the individuals have no ſeeds in their berries, and ſometimes with and without ſeeds are found on one buſh. It grows wild on chalky hills in ſeveral parts of England, flowers in May, and ripens its fruit in September. The fruit of this ſhrub is a mild aſtringent acid, acceptable to the ſtomach, and of great medicinal efficacy in hot bilious diſorders and a colliquative or putrid diſpoſition of the humours.

Among us, theſe berries are commonly made into jelly, by boiling them with an equal weight of fine ſugar, over a gentle fire, to a due conſiſtence, and then ſtraining the fluid through a woollen cloth. By drying the berries, their acidity is abated, and their aſtringency improved.

The leaves of the barberry buſh have likewiſe a hot ungrateful reſtringent acid taſte, and have ſometimes been employed in the ſame intentions as the fruit, and as an ingredient in cooling ſallads. The inner yellow bark, in taſte auſtere and bitteriſh, is ſaid to be gently purgative, and to be ſerviceable in jaundices. Mr. Ray commends, in this diſeaſe, from his own experience, a decoction in ale or other liquors, or rather an infuſion in white wine, of the yellow bark both of the branches and the roots. It gives a deep yellow tincture both to watery and ſpirituous menſtrua. *Lewis's Hiſtory of the Materia Medica.*

* BERENICE, in fabulous hiſtory, the daughter of Philadelphus and Arſinoe, and the wife of Energetes; ſhe vowed to cut off her hair, if her huſband returned victorious, which ſhe did, and ſent it to the temple of Venus, on which the hair was changed into a conſtellation of ſeven ſtars.

BERGAMOT, a fragrant eſſence extracted from a fruit which is produced by ingrafting a branch of lemon-tree upon the ſtock of a bergamot-pear, It is alſo the denomination of a coarſe tapeſtry, manufactured with flocks of ſilk, wool, cotton, hemp, ox, cow, or goat's hair, and ſuppoſed to be invented by the people of Bergamo.

* BERG-OP-ZOOM, or Bergen-op-Zoom, a town of the Low Countries, in Dutch Brabant, and in the marquiſate of the ſame name. It is ſeated on an eminence, in the middle of a moraſs, about a mile and a half from the eaſtern branch of the Scheld. The church before the laſt ſiege, was reckoned a good building, and ſo was the marquis's palace. It has a very advantageous ſituation on the confines of Brabant, Holland, Zealand, and Flanders. It is ſtrong by nature as well as by art, being ſo ſecured by the moraſſes about it, which are formed by the river Zoom, that it was reckoned impregnable. It was, however, taken in 1747, by the French, but 'tis imagined not without the help of treachery. The fortifications are allowed to be the maſter-piece of that great engineer Cohorn. It had been twice beſieged before, without ſucceſs. It is ſeventeen miles north of Antwerp, and twenty-two ſouth-weſt of Breda. Long. 4. 15. E. Lat. 51. 30. N.

* BERKSHIRE, an inland county in the dioceſe of Saliſbury, bounded on the north and north-eaſt by the Thames, on the weſt by Glouceſterſhire and Wiltſhire, on the ſouth-eaſt by Surry, and on the ſouth by Hampſhire. It is one hundred and twenty miles in circumference, and contains five hundred and twenty-ſeven thouſand acres, and ſixteen thouſand nine hundred and ſix houſes. The air is ſweet, and ſoil fruitful. It has plenty of corn, cattle, wild-fowl, wool, and timber, eſpecially oak and beech. The rivers are the Thames, Kennet, Ocke, and Loddon. The Kennet is now made navigable by act of parliament. This county ſends nine members to parliament, has one hundred and forty pariſhes, and twelve market towns. Reading, the chief, is thirty-nine miles weſt of London, and is remarkable for malt, meal, Holland tapes, and canvas or ſail-cloth. The reſt are Abingdon, Windſor, Wallingford, Maidenhead, Hungerford, Newbury, Farringdon, Wantage, Lower Lambourn, Eaſt Ilſly, and Oakingham. The royal palace and caſtle at Windſor, built by Edward III. are remarkable for their fine ſituation, rich furniture, paintings, and many other curioſities. In St. George's chapel are held the chapters of the order of the garter, inſtituted by the above king Edward III. A few miles to the ſouth-eaſt of this town is the figure of a white horſe, covering an acre of ground, cut in a hill of chalk, from whence

it may be ſeen at a great diſtance, and is ſaid to have been made by direction of king Alfred, in memory of a great victory he obtained.

* BERLIN, a city of Germany, capital of the electorate of Brandenburg, and where the king of Pruſſia generally reſides. This is one of the largeſt, beſt built, and beſt governed cities of any in Germany. The ſtreets are large, ſtrait, clean, and well paved, and ſome of them very long and elegant. There are alſo ſeveral large and beautiful ſquares. It is ſurrounded with handſome gardens, which produce pulſe and excellent fruit. The river Spree, that croſſes the city, has a communication with the Havel, Oder, and Elbe, which greatly facilitate commerce. The royal ſtreet is croſſed by five others, which are large and fine. On the new bridge, which is of ſtone, over the Spree, is an excellent equeſtrian ſtatue of William the Great. The elector is repreſented in a Roman habit, and his horſe ſtands on a pedeſtal of white marble, adorned with baſſo relievos, and four ſlaves bound to the baſe. After this bridge is paſt, the king's palace appears, which is a grand and ſuperb edifice; it is four ſtories high, and the apartments extremely magnificent. No place in the world has ſuch a great quantity of ſilver tables, ſtands, luſtres, branched candleſticks, ſcreens, looking-glaſs frames, canopy beds, chairs, &c. In the knight's hall there is a buffet, which takes up all one ſide, where there are baſons and ciſterns of gilt ſilver, of an extraordinary magnitude. The furniture of the great apartment is extremely rich, and there is a very handſome gallery, adorned with paintings, repreſenting the principal actions of Frederick I. Formerly there were fine gardens to the palace, but they are now turned into a place for arms.

The arſenal conſiſts of four grand buildings, that form a court in the middle, like a college; each front has three large portico's. On the principal gate is a medallion of the late king, in bronze, and the four cardinal virtues, of a coloſſal ſtature, placed on pedeſtals on each ſide of the portico, ſeem to look at the portrait of the king, which is ſupported by Fame and Victory. There are many other things worthy of obſervation, ſuch as the cabinet of medals, and of the antiquities belonging to the king; that of natural curioſities; the chemical loboratory, and its furnaces and medals, of a new invention; the theatre for anatomical demonſtrations; the royal library, which is one of the completeſt in Germany, and has many ſcarce books and manuſcripts. The river Spree falls into the Elbe, and communicates with the Oder by a canal, near Francfort on the Oder, from which Berlin is forty-five miles north-weſt, forty-five north-eaſt from Wittemburgh, ſeventy-five ſouth by-weſt from Stetin, and three hundred north-by-weſt from Vienna. Long. 13. 37. E. Lat. 52. 53. N.

* BERMUDAS, (the iſlands of) were diſcovered by John Bermudas, in 1503; Sir John Sommers was ſhipwrecked upon them in 1609; hence ſome called them the Somner Iſlands. Theſe iſlands are numerous; but ſome are only barren rocks. They lie in a little compaſs, almoſt in the form of a ſhepherd's crook, and contain about twenty thouſand acres of ground, ſurrounded in a manner with rocks, which render them inacceſſible to ſtrangers. That called St. George's Iſland is the largeſt. It was firſt planted by Richard Moore, with about ſixty perſons, in 1612. Theſe built themſelves huts, which were converted by degrees into handſome houſes, that at length became a town, called St. George. The commodities they traded in were ſpermaceti, ambergriſe, and tobacco. While the new colony was increaſing, they were infeſted with rats, which deſtroyed almoſt all their proviſions, and had like to have brought on a famine; but they found means to deſtroy them, and ſaved themſelves; inſomuch that there are ten thouſand inhabitants, beſides ſlaves, who carry on a good trade in tobacco, the ground producing large crops; but it is not ſo good as that of our plantations on the continent of America. The country is moſtly mountainous, but has ſome fertile plains. The inhabitants catch the rain water, and preſerve it in ciſterns, becauſe the water of the iſland is brackiſh. Their chief produce is Indian wheat and tobacco; but they have ſome fruit, particularly oranges. The wood of the cedar-trees is fine, hard, durable, and fragrant. With this they build their houſes, ſhips, and churches. The palmeto bears a delicious fruit, like a damſon, and yields wood both for building and fewel; the leaves are eight or ten feet long, and ſerve to cover houſes. What they call a palm or date-tree yields a fine fruit, and there is variety of odoriferous and medicinal woods in their foreſts. They have great plenty of ſea-turtle, which ſerves for common food, and is excellent eating. Their birds are hawks of all ſorts, ſtorks, herons,

bitterns, oſpreys, cormorants, baldcoots, moorhens, teals, ſnipes, ducks, widgeons, ſparrows, wood-peckers, owls, and bats. But it is obſervable, that though theſe birds have common Engliſh names, yet they differ from ours. The air is ſerene, and generally healthful, unleſs in tempeſtuous ſeaſons. They have no poiſonous animals, unleſs their ſpiders are ſuch; theſe are exceeding lage, and finely variegated with different colours.

The inhabited parts of theſe iſlands are divided into nine diſtricts, called tribes. 1. St. George, 2. Hamilton, 3. Ireland, 4. Devonſhire, 5. Pembroke, 6. Pagets, 7. Warwick, 8. Southampton, and 9. Sandys. There are but two places where a ſhip can come ſafely near the ſhore, and theſe are ſo well covered with high rocks, that few will care to venture in without a pilot; and they are ſo well defended by forts, that they have no occaſion to dread any enemy. St. George's town is at the bottom of the principal haven, and is defended by nine forts, on which are mounted ſeventy pieces of cannon, which command the entrance. This town has a handſome church, a fine library, and a noble town-houſe, where the governor, council, and others aſſemble. Beſides theſe, there are about a thouſand houſes, well built. The tribes of Southampton and Devonſhire have each a pariſh church and a library, and the former has a harbour of the ſame name. There are houſes and hamlets all over theſe iſlands, where particular plantations require them, among which there are ſmall chapels for divine ſervice. The inhabitants are cloathed chiefly with the Engliſh manufactures, and all their implements for tilling the ground and building are made here. But what little traffic they have is with the continent of North America, to which they ſend ſloops and trading veſſels for ſale. Upon the whole, they have little or no proſpect of ever growing rich, and therefore it is no wonder that ſome of the younger ſort tranſport themſelves elſewhere. This practice, if continued, will ſoon decreaſe the number of the inhabitants, and in proceſs of time greatly impoveriſh the iſlands, unleſs ſome expedient be found out to employ their hands in ſome uſeful and profitable manufacture, or natural production, which will yield them ſufficient encouragement. It is ſix hundred miles eaſt of Carolina, in the latitude of 32. 30. Long. 65. 10. W. Lat. 32. 30. N.

BERNARDIN MONKS, an order of religious, founded by Robert Abbot of Molome: they are properly Ciſtercians, or Monks of Citeaux; but their order having been enlarged and amplified by St. Bernard, they were from thence called Barnardins.

The Bernardin nuns, as well as monks, are habited in white, and ſubject to the laws of the Ciſtercians.

BERRY, *Bacca*, a round fruit, for the moſt part ſoft, and covered with a thin ſkin, containing ſeeds in a pulpy ſubſtance.

They are of various ſizes, forms, properties, and uſes, according to the plants on which they grow. Some are uſed in dying, as French Berries: ſome grow ſingly, others in cluſters.

* BERWICK-UPON-TWEED, a town on the borders of England and Scotland, and a county of itſelf. It ſtands on the north or Scotch ſide of the river Tweed, pleaſantly ſituated on an eaſy declivity, almoſt cloſe to the ſea, and has a ditch on the north and eaſt, but on the ſouth and weſt it has high walls, regularly fortified, and planted with cannon, and to which the river ſerves as a moat. The houſes are generally well built, and the town-houſe is a handſome ſtructure, with a lofty turret, in which are eight bells, and a fine clock, which tells the quarters, with four dials, one on each ſide the ſquare. The church is a neat building, but has no bells. The bridge is nine hundred and forty-ſeven feet long, ſupported by fifteen arches. The town is governed by a mayor, recorder, town-clerk, and four bailiffs, and has a coroner, a treaſurer, four ſerjeants at mace, and a water bailiff. It had a ſtrong caſtle, now in ruins. It has a market on Saturdays, well ſupplied, and a fair on Friday in Trinity-week for black cattle and horſes. The principal trade here is ſalmon, which is caught in the Tweed, and reckoned to be as good as any in the kingdom. Some are ſent alive, and ſome pickled in kits by perſons who ſubſiſt on that employment, who are called ſalmon coopers. In June and July ſalmon is ſold for a penny a pound. It is eighty miles north-eaſt of Carliſle, and three hundred and thirty-five north-weſt of London.

BERYL. See AQUA *Marina*.

BESANT, or BEZANT, a coin of pure gold, of an uncertain value, ſtruck at Byzantium, in the time of the Chriſtian emperors; whence the gold offered by the king at the altar, is called beſant, or biſant.

BETEL, in botany, an Indian plant, in great uſe and eſteem throughout the Eaſt, where it makes a conſiderable article of commerce. The betel bears ſome reſemblance to the pepper-tree. Its leaves are like thoſe of ivy, only ſofter, and full of a red juice, which among the orientals is reputed of wondeful virtue for preſerving the teeth and rendering the breath ſweet. The Indians are continually chewing theſe leaves, which make their lips ſo red, and teeth black, a colour by them vaſtly preferred to the whiteneſs affected by the Europeans. The conſumption of betel leaves is incredible, no perſon, rich or poor, being without their box of betel, which they preſent to each other by way of civility, as we do a ſnuff-box.

* BETHLEHEM, a town of Paleſtine, famous for the birth of Jeſus Chriſt. It was once a flouriſhing town, but is now only a poor village. It is ſeated on the ridge of a hill, which runs eaſt and weſt. Here is a church, built by St. Helena, in the form of a croſs, which is very large; from the top of which may be ſeen all the country round about. The walls were formerly overlaid with fine marble, but the Turks have taken it to adorn their moſques. There is a grot or cell, which they ſay was a lodging place of St. Jerom, where he tranſlated the Bible. Another entrance leads to a vault or chapel, twelve feet wide and forty long, whoſe floor is paved, and ſides lined with white marble, and the roof is adorned with Moſaic work, now much decayed. At the end of this there is an arched concavity, with an altar, over which is a picture of the nativity, and under it a vault, the middle of which is a ſtar made with ſtones of various colours, to mark the place where they ſay our Saviour was born; and near this is the manger where they pretend he was laid; it is hewn out of a rock, and is now flagged with white marble. The few cottages that are yet ſtanding are inhabited by Greeks and Armenians, who get a poor livelihood by ſelling the model of the ſepulchre and grot of the nativity to ſtrangers, cut in wood or ſtone; as alſo by attending pilgrims. Bethlehem is about ſix miles weſt of Jeruſalem. Long. 35. 55. E. Lat. 31. 30. N.

* BETHLEM HOSPITAL for lunatics, was founded in 1247.

BETONY, in botany, a plant of very little taſte or ſmell, which has been celebrated for abundance of medicinal virtues, but does not promiſe to have any conſiderable activity: its principal uſe is an ingredient in herb ſnuffs, in compoſitions for ſmoaking, and, as a ſubſtitute to tea. It is obſervable that the roots of betony differ greatly from the other parts of the plant; they operate both upwards and downwards, and ſeem to approach to the nature of the roots of hellebore. *Neumann's Chemiſtry.*

BETULA, the birch-tree, a ſmall tree common in moiſt woods, with numerous very flexible branches, and ſomewhat oval, ſharp pointed ſerrated, deep green leaves, hanging on long and weak pedicles; producing ſmall ſcaly cones, which contain little winged ſeeds. On deeply wounding or boring the trunk of the birch-tree early in the ſpring, there iſſues a very large quantity of a limpid, watery, ſweetiſh juice. It is ſaid, that one tree will bleed a gallon or two in a day; that the juice extracted near the root is much more watery, and of leſs taſte than that obtained from the upper part of the trunk, or from the branches; and that after the leaves have begun to appear, the juice loſes its ſweetneſs and becomes diſagreeable. This juice has been drank as an antiſcorbutic and deobſtruent; it ſenſibly promotes urine, and, if taken freely, looſens the belly. In keeping, it ſoon turns ſour, unleſs defended from the air by covering its ſurface with a little oil; by fermentation, it is converted into a weak vinous liquor. Inſpiſſated to the conſiſtence of a thin ſyrup, and ſet in a cool place for ſome weeks, it yields browniſh ſaline concretions, approaching, as Marggraf obſerves, to the nature of manna. The leaves and the bark of the tree have been employed, chiefly externally, as reſolvents, detergents, and antiſeptics. Simon Paulli relates, that an univerſal pruriginous ſcabies, which had been received by infection, was cured by bathing with a decoction of the bark and young branches, in which ſome nitre and tartar had been diſſolved. The leaves rubbed a little, yield a pretty ſtrong, and not diſagreeable ſmell. This tree is propagated by ſuckers taken from the roots of old trees, which may be tranſplanted either in October or February, but October is to be preferred; for if the ſpring ſhould prove dry, thoſe planted in February will many of them fail; it delights in a poor ſoil, and will grow either in moiſt ſpungy ſoils, or in ſtony or gravelly marſhes, or bogs: when the young trees have been planted two years, you ſhould, if deſigned for underwood,

wood, cut them down within ſix inches of the ſurface, which will cauſe them to ſhoot out ſtrong and vigorous branches; but if they are deſigned for large trees, it will be much better to let them ſtand three years before you head them down; and when you do it, cut them within three inches of the ground, that their ſtems may be ſtraight and handſome: but you muſt obſerve, when they begin to put out, whether they produce more than one ſhoot; which if they do, you muſt cut off all but the ſtrongeſt and moſt convenient ſhoot, which muſt be trained up for a ſtem. The timber of this tree, though accounted the worſt of all others, is not without its various uſes: the turners often uſe it to make chairs, &c. and the huſbandmen for making ox-yokes; it is alſo planted for hop-poles, hoops, &c. but, in places near London, it is kept often cut to make brooms, and turns to great account.

BEVEL, among maſons, carpenters, joiners, and bricklayers, a kind of ſquare, one leg whereof is frequently crooked, according to the ſweep of an arch or vault. It is moveable on a centre, and ſo may be ſet to an angle. The make and uſe of this inſtrument is pretty much the ſame as thoſe of the common ſquare and mitre, except that thoſe are fixed, the firſt at an angle of ninety degrees, and the ſecond at forty-five; whereas the bevel being moveable, may in ſome meaſure ſupply the place of both, which it is chiefly intended for, ſerving to ſet off or transfer angles, either greater or leſs than ninety or forty-five degrees.

BEVEL-ANGLE, any other angle beſides thoſe of ninety or forty-five degrees.

* BEVERIDGE, (WILLIAM) biſhop of St. Aſaph, was born at Barrow, in Leiceſterſhire, in the year 1638, and diſtinguiſhed himſelf by his early piety, and integrity of life. After finiſhing his ſtudies at Cambridge, where he diſtinguiſhed himſelf by his ſkill in the oriental languages, he became ſucceſſively vicar of Yealing, in Middleſex, rector of St. Peter's Cornhill, London, prebendary of St. Paul's cathedral, archdeacon of Colcheſter, prebendary of Canterbury, chaplain in ordinary to king William and queen Mary; and, in 1704, was advanced to the biſhopric of St. Aſaph. This dignity, however, he enjoyed but a ſhort time; for he died at his lodgings in the cloyſters in Weſtminſter abbey, March the 5th, 1708, in the ſeventy firſt year of his age, and his body was interred in St. Paul's Cathedral. He wrote ſeveral treatiſes, many of which are now in great eſteem; particularly Private Thoughts upon Religion; The Church Catechiſm explained, and an Expoſition of the Thirty-nine Articles.

* BEVERLEY, a town of Yorkſhire, which is governed by a mayor, a recorder, twelve aldermen, &c. and ſends two members to parliament. The minſter is a very fine neat ſtructure, and the roof is an arch of ſtone; in it are ſeveral monuments of the Percies, earls of Northumberland, who had added a little chapel to the choir, in the window whereof there are ſeveral pictures of that family painted on glaſs; at the upper end of the choir, at the right of the altar-place, ſtands the freed-ſtool, made of one entire ſtone, to which whoever fled had a right of protection; at the upper end of the body of the church, next the choir, hangs an ancient table, with the picture of king Athelſtone, who founded the church; between them is this inſcription,

Als free make I thee,
As heart can wiſh, or egh can ſee.

Hence the inhabitants pay no toll in any town or port in England. In the body of the church ſtands an ancient monument, called the virgin's tomb, becauſe two virgin ſiſters lie buried there, who gave the town a piece of land, into which any free man may put three milch cows, from Lady-day to Michaelmas; at the lower end of the body of the church is a large font of agate ſtone.

The liberties contain above a hundred towns and parts of towns in Holderneſſe and other parts of the Eaſt-Riding belonging to it. The town is a mile in length, having pleaſant ſprings running quite through it. It is beautified with two ſtately churches, and has a free-ſchool, with two fellowſhips, ſix ſcholarſhips, and three exhibitions in St. John's college, Cambridge, belonging to it; beſides ſix alms-houſes, where none are admitted but thoſe that give bond to leave their effects to the poor when they die. It has two markets, on Wedneſdays and Saturdays; and four fairs, on Thurſday before Valentine's-day, Holy-Thurſday, July 5, and November 5, for cattle, horſes, and ſheep. Beverley is one hundred and eighty-one miles from London. Long. 0. 9. E. Lat. 53. 50. N.

* BEWDLY, a town in Worceſterſhire, it has a market on Saturdays. It

ſends two members to parliament, and is governed by a bailiff, twelve capital burgeſſes, a recorder, a ſteward, a town-clerk, and two ſerjeants at mace. It is pleaſantly ſeated on the river Severn, and was formerly accounted a very delightful place; for which reaſon Henry VII. built a houſe here for prince Arthur, and called it Tiken hall. It is a neat well-built town; it has three fairs, on April 23, for horned cattle, horſes, cheeſe, linen and woollen cloth; on December 10, for hogs only; and on December 11, for horned cattle, horſes, cheeſe, linen and woollen cloth. It is one hundred and twenty-ſeven miles north-weſt of London. Long. 2. 20. W. Lat. 52. 25. N.

BEY, among the Turks, a governor of a country or town. Every province in Turky is divided into ſeven ſangiacs or banners, each of which qualifies a bey, and theſe are all commanded by the governor of the province, whom they call beglerbeg. Bey of Tunis, the ſame with the dey of Algiers, is the prince or king of that kingdom.

BEZANS, cotton cloths, which come from Bengal; ſome are white, and others ſtriped with variety of other colours.

BEZOAR, in natural hiſtory and medicine, a general name for certain animal ſubſtances, ſuppoſed to be effectual in preventing the fatal conſequences of poiſon. Bezoars are ſtony concretions, formed in many land animals; in the ſtomach of goats, harts, horſes, aſſes, cows, &c. as well as in the urinary and gall-bladder of the human body. Several of theſe ſubſtances were by the credulity of former times celebrated as medicines of extraordinary virtue, and diſtinguiſhed by an oriential name, bezoar, which ſignifies a ſubduer of poiſons, or a lord over poiſons; hence bezoardic is become a common appellation for medicines ſuppoſed to be poſſeſſed of alexipharmic powers. The bezoar of the ape, and that of the porcupine, called *Picdra del porco*, have been valued moſt; ſingle ſtones having been ſold for ſixty and eighty pounds ſterling.

There are two ſorts of bezoar kept in the ſhops, diſtinguiſhed by the epithets oriental and occidental, from the countries where they are produced.

The oriental or beſt bezoar is found in the ſtomach of an animal, which is ſaid to bear a reſemblance both to the goat and the ſtag, and ſaid to be met with in different parts of Perſia, China, and the Eaſt Indies. Thoſe that live upon the mountains, and feed on aromatic herbs, are ſuppoſed to afford a better bezoar than thoſe that live on the plains and valleys.

The occidental bezoar is ſaid to be found in the ſtomach of an animal of the ſame genus with that which affords the oriental. This ſort of bezoar is not near ſo beautiful, ſo ſmooth, or ſo poliſhed as the other: it is commonly of a whitiſh aſh, or dark-grey colour; ſometimes browniſh or blackiſh, and ſometimes of a greeniſh yellow. From experiments it appears, that the occidental bezoar is more likely to be an animal production than the oriental, as it yields in diſtillation ſome ſmall portion of volatile urinous matter. It is nevertheleſs much inferior in value, as being leſs beautiful, and ſcarcely ever made uſe of in medicine. If the oriental and occidental bezoars were both genuine, or true animal calculi, they would probably be equal in virtue to one another, though certainly not equal to oyſter-ſhells and other common abſorbents. *Neumann's Chemiſtry.*

BEZOARDIC, whatever partakes of the nature of bezoar; alſo to compound medicines, where bezoar makes an ingredient.

BIBLE, *Biblos*, *Gr.* the book, a name given by Chriſtians, by way of eminence, to a collection of the ſacred writings, containing thoſe of the Old and New Teſtament, the foundation of the Jewiſh as well as the Chriſtian religion. The Jews, it is true, acknowledge only the Scriptures of the Old Teſtament, the correcting and publiſhing of which is unanimouſly aſcribed both by the Jews and Chriſtians to Ezra. After the return of the Jews from the Babyloniſh captivity, Ezra got together as many copies as he could of the ſacred writings, and out of them all prepared a correct edition, diſpoſing the ſeveral books in their natural order, and ſettling the canon of the Scripture for his time, having publiſhed them, according to the opinion of moſt learned men, in the Chaldee characters, as the Jews upon their return from their captivity, brought with them the Chaldaic language, which from that time became their mother-tongue, and probably gave birth to the Chaldee tranſlation of their Scriptures.

Hebrew BIBLE. There is in the church of St. Dominic, in Bononia, a copy of the Hebrew ſcriptures, which they pretend to be the original copy, written by Ezra himſelf. It is written in a fair character, upon a ſort of leather, and made up into a roll, after the ancient manner: but its having the vowel points annexed, and the writing being freſh and fair, without any decay, theſe circumſtances prove the novelty of the copy.

It is beyond diſpute that the Latin churches had, even in the firſt ages, a tranſlation of the Bible in their language, which being the vulgar language, and conſequently underſtood by every body, occaſioned a vaſt number of Latin verſions. Among theſe there was one which was generally received, and called by St. Jerom, the vulgar or common tranſlation. St. Auſtin gives this verſion the name of the Italic, and prefers it to all the reſt. There were ſeveral other tranſlations of the Bible into Latin, the moſt remarkable of which are the verſions of St. Jerom, Santes Pagninus, cardinal Cajetan, and Iſidore Clarius, all from the Hebrew text. Beſides theſe tranſlations from Catholic authors, there are ſome made by proteſtant tranſlators of the Hebrew; the moſt eminent of which are the verſions of Sebaſtian Munſter, Leo Judæ, Sebaſtian Caſtalio, Theodore, Beza, &c. The Bible has alſo been tranſlated into moſt of the modern European languages, particularly the Engliſh.

Engliſh BIBLE. The firſt verſion of any part of the Scriptures into the language of our own country, was that of Adelm, biſhop of Sherburn, who flouriſhed in the year 709 That prelate made an Engliſh-Saxon verſion of the Pſalms. About the year 730, Eadfrid, or Ecbert, biſhop of Lindisferne, tranſlated ſeveral of the ſacred books into the ſame language. Venerable Bede, who died in 735, is alſo ſaid to have tranſlated the whole Bible into Saxon; but Cuthbert, Bede's diſciple, in enumerating the works of his maſter, mentions only his verſion of the goſpel of St. John, without ſaying any thing of the other books. Elfric, abbot of Malmſbury, made an Anglo-Saxon verſion of ſeveral books of the Bible: this work was afterwards printed at Oxford, in 1699. There is alſo an old Anglo-Saxon verſion of the four goſpels publiſhed by Matthew Parker, archbiſhop of Canterbury, in 1571; but the author of it is not known. Dr. Mill obſerves that this verſion was taken from a Latin copy of the old Vulgate. With regard to the Engliſh tranſlations of the Bible, the moſt ancient is that of John de Treviſa, a ſecular prieſt, who tranſlated the Old and New Teſtament into Engliſh, at the requeſt of Thomas lord Berkley; he lived in the reign of Richard the Second, and finiſhed his tranſlation in 1357. The ſecond author who undertook this work was the famous Wickliff, who lived in the reigns of Edward the Third and Richard the Second. Manuſcripts of this verſion are ſtill preſerved in ſeveral libraries in England. In the year 1534, an Engliſh verſion of the Bible, done partly by William Tindal, and partly by Miles Coverdale, was brought into England from Antwerp. But the biſhops finding great fault with this verſion, a motion was made and carried in convocation, for making a new tranſlation of the ſcriptures, to be placed in all the churches. The tranſlation was accordingly begun immediately, and the whole impreſſion finiſhed in three years. Fuller mentions another tranſlation of the Bible, printed in the year 1549. In the reign of Queen Elizabeth, the *Biſhops Bible* appeared; ſo called, becauſe ſeveral prelates were concerned in that verſion. In the ſecond year of James I. a reſolution was taken, at a conference held at Hampton Court, for a new tranſlation of the Bible; which deſign was executed by forty-ſeven tranſlators, in the year 1607. And this tranſlation is now read by authority in all the Engliſh churches.

BIBLIOTHECA, in its original and proper ſenſe, denotes a library or place for depoſiting books.

BIBLIOTHECA, in matters of literature, denotes a treatiſe giving an account of all the writers on a certain ſubject. Thus, we have bibliothecas of theology, law, philoſophy, &c. There are likewiſe univerſal bibliothecas, which treat indifferently of all kinds of books; alſo ſelect bibliothecas, which give an account of none but authors of reputation. Many of the bibliothecas agree, in moſt reſpects, with what are otherwiſe called memoirs or journals of literature, except that theſe laſt are confined to new books; but there are other bibliothecas that differ in nothing from catalogues of the writers on certain ſubjects.

BICE, or BISE, among painters, a blue colour prepared from the lapis armenus. Next to ultramarine, which is too dear to be uſed in common work, it lies beſt near the eye of all other blues.

BICEPS, in anatomy, the name of ſeveral muſcles: as the

BICEPS-HUMERI, or CUBITI. This is a muſcle of the arm, and has two heads: the firſt of which ariſes, with a long, round tendon, from the upper edge of the acetabulum ſcapulæ, running under the ligament of the articulation, in a channel, on the head of the ſhoulder-bone, wherein it is incloſed by a proper ligament: the other ariſes with a ſomewhat broad, flat, and long tendon, at the extremity of the proceſſus coracoides ſcapulæ; in its deſcent it ſtrictly adheres to the coracobrachialis, and parting from it, both theſe heads compoſe a large fleſhy belly, which, becoming tendinous near the cubit, is inſerted by a ſtrong round tendon to the tubercle, at the upper head of the radius. When this muſcle acts, the cubit is bended.

BICEPS TIBIÆ, or FEMORIS, a muſcle of the leg with two heads; the ſuperior ariſing with a round tendon from the protuberance of the iſchium; and the other, being the ſhorteſt, from the lower part of the os femoris; both which join together, and are inſerted by one tendon into the ſuperior and external part of the perone. Beſides the office commonly aſſigned to this muſcle, in bending the tibia, together with the ſartorious and membranoſus, it is likewiſe employed in turning the leg, together with the foot and toes, outwards, when we ſit with the knees bended.

* BIDDIFORD, a market-town in Devonſhire, on the ſide of two hills, between which a fine river runs. There is a bridge over the river, through the arch of which ſhips of great burden may paſs, without their maſts; at low-water there remains a channel ſufficient for pleaſure boats. The town is well built, particularly a new ſtreet fronting the quay, which is bridge-land. The quay itſelf is in the body of the town, and ſo commodious, that ſhips of two hundred tons may lay their ſides to it and unload without the uſe of a lighter. It is a place of conſiderable trade. Great quantities of potters ware are made here, and exported to Briſtol, Wales, and Ireland. The town is governed by a mayor, alderman, a recorder, capital burgeſſes, ſerjeants, &c. and has a particular court, in which actions for debt are brought in any caſe, and for any ſum. There is a market three days in a week, Tueſdays, Thurſdays, and Saturdays. The number of houſes is about five hundred. The church is large, and the greateſt part new built, and yet it will but juſt contain the auditory. It has an organ, and a good ring of bells, which the nearneſs of the water renders very muſical. There are two diſſenting meeting-houſes, frequented by about a fourth part of the inhabitants; and a grammar-ſchool, endowed with about twenty pounds a year. The diſtance from London is two hundred and three miles.

BIGAMY, the poſſeſſion of two wives at the ſame time, by ſtat. 1. Jac. I. which makes bigamy felony. Among the Romans perſons convicted of bigamy were branded with a note of infamy; and in France formerly they were puniſhed with death.

Spiritual BIGAMY, is when a perſon holds two incompatible benefices, as two biſhoprics, two vicarages, &c.

BIGNONIA, the trumpet-flower, in botany. There are no medicinal virtues aſcribed to this plant.

BIGOT, one fooliſhly obſtinate and perverſely wedded to any opinion, but particularly an opinion of a religious nature.

BILANDER, in the ſea language, a veſſel of two maſts, not very common; the mainſail of which, inſtead of ſtretching acroſs on a parallel yard like that of a ſhip, is extended fore and aft, or along the ſhip.

BILE, BILIS, a yellow bitter liquor, ſeparated from the blood of the liver, collected in the porus biliarus and gall-bladder, and thence diſcharged by the common duct into the duodenum.

The uſefulneſs and neceſſity of the bile, for the preſervation of life and health, are ſufficiently known to every one who is acquainted with the rational and ſolid principles of phyſic. It is well known to phyſicians and anatomiſts, that the principal, if not the only office of the liver, is, by a beautiful mechaniſm, to filtrate and ſtrain that active, ſaline, and ſulphureous humour, called the bile, from the blood through the trunk of the vena porta, the hepatic artery, and its glandulous kernels. It muſt be owned, anatomiſts are not agreed among themſelves whence the gall-bladder, adhering to the liver, is ſupplied with the bile it receives; for ſome of them are of opinion, that the tunica glanduloſa ſeparates from the blood conveyed thither by the cyſtic arteries: others again maintain, that there are ſome very minute ducts inſerted in the bottom of the gall-bladder, by means of which the bile is conveyed to it; and another claſs of anatomiſts venture to affirm, that there are certain cyſti-hepatic ducts, by means of which the bile is immediately conveyed to the receptacles. The bile in the gall-bladder differs very conſiderably from that in the liver; for the former is thicker, more acrid, more bitter, and of a deeper colour than the latter, which is more fluid, more diluted, and leſs bitter. Though the bile, in conſequence of the ingredients of which it is compoſed, is a humour diſagreeable both to the ſolid and fluid parts of the human body, and in this ſenſe excrementitious; yet, with regard to the elaboration of the chyle, it is highly uſeful and neceſſary, and conſequently ought not to be diſcharged from the body, till it has exerted itſelf to that purpoſe.

From a great number of experiments made on this fluid by Baglivi, Du Hamel, &c. it plainly appears, that the bile is a humour compoſed of an oil, a ſalt, and water. It may therefore be conſidered as a liquid animal ſope, ſo that it is of an abſtergent and reſolvent quality. That it is ſo, the practice of ſome tradeſmen is a ſufficient proof; for dyers of cloth, in order to take out the greaſe which ſticks to the wool, and hinders the adheſion of the colour, uſe ſope, or putrid urine, after it has aſſumed an alkaline nature, or a lixivium of ſome fixed alkali: but they may, with equal ſucceſs, uſe ox-gall for the ſame intention. Painters alſo uſe the bile of animals for mixing and diluting their colours. It diſcovers its efficacy to be the ſame in medicines, where a ſaponaceous quality is required, or where the intention is to abſterge, where the ſluggiſh veſſels are to be ſtimulated, where a tenacious ſubſtance is to be reſolved, or a viſcid one attenuated. See *Boerh. Aph.* LXXV. 5.

Beſides, as bile has for an ingredient a ſalt, which, though not an alkali, yet approaches to it like other animal ſalts, it muſt of courſe prove an efficacious medicine in thoſe diſorders where an acid is to be reſiſted and corrected: ſo that it muſt be beneficial to bodies which are prone to generate acids, to ſuch as abound with mucous and pituitous humours, and to thoſe who lead a ſedentary life, or labour under loſs of appetite. It is alſo added to purgative medicines, with a view to lubricate, ſtimulate, and reſolve. The method of uſing it is to dry it a little, and make it up into ſmall pills: three or four grains may be given for a doſe to adults; but, for infants, one grain of it is ſufficient for a doſe. It ſeems to be owing to this ſaponaceous reſolvent quality, that a few drops of the bile extracted from a living dog, mixed with the aqua epileptica of Langius, produce the deſired effect in the cure of the epilepſy. See *Act Hoffm.* Vol. III. *Obſ.* 20.

From theſe circumſtances we are enabled to diſcover the reaſon why Boerhaave recommended the uſe of bile, not only againſt ſpontaneous gluten, or viſcid humours in general; but more eſpecially preſcribed it againſt the coagulums formed in the primæ viæ of children.

BILGE, in naval architecture, the ſpace of a ſhip's bottom comprehended between the keel and the part whereon ſhe would reſt when laid aground.

BILINGIUS, in a general ſenſe, implies a perſon who ſpeaks two languages; but in law it is uſed to ſignify a jury in a trial between an Engliſhman and a foreigner, when one half are natives, and the other ſtrangers.

BILIOUS, relating to the bile, or partaking of its nature.

BILIOUS *Fever.* See FEVER.

BILL, in mechanics, a cutting inſtrument of iron, uſed by huſbandmen, gardeners, &c.

BILL, in trade, an account of goods delivered to, or of work done for a perſon.

BILL *of Credit*, an order given by a merchant or banker to a perſon, impowering him to receive money from his correſpondents in foreign countries.

BILL *of Entry*, an account of goods entered at the cuſtom-houſe, both inwards and outwards.

BILL *of Exchange*, a ſhort order written on a ſlip of paper, by a merchant, &c. for paying to ſuch a perſon, or his order, or to the bearer, in a diſtant place, a certain ſum of money.

There are three things neceſſary to conſtitute a bill of exchange. 1. That it be drawn in one place upon ſome perſon in another. 2. That there be three perſons concerned, the drawer, the preſenter, or perſon in whoſe favour it is drawn, and the accepter, or him on whom it is drawn. It muſt alſo mention that the value which the drawer has received, is either in bills of exchange, in money, merchandize, or other effects, which are to be expreſſed. Theſe bills are made payable either at ſight, or ſo many days, weeks, or months after date; the ſpace of a month being called uſance, and two or three months after date, double or treble uſance.

Bills of exchange are alſo either inland or foreign; the former is ſaid to be only in the nature of a letter; but the latter is more regarded in law, becauſe it is for the advantage of commerce with other countries, and conſequently renders it an object of public concern. Not only the drawer, but alſo every indorſer of a bill is liable to the payment of it; for an indorſer charges himſelf in the ſame manner, as if he had originally drawn the bill: and the plaintiff, in an action in ſuch a caſe, is not obliged to prove the drawer's hand, becauſe the indorſer becomes a new drawer. He muſt however prove that he demanded the money of the drawer or drawers, or that he made enquiry, and could not find them in convenient time; for by the cuſtom eſtabliſhed among merchants, the indorſer is to receive the money of the firſt drawer if he can; but if he cannot, the indorſer muſt anſwer it. The forging of a bill of exchange, or any acceptance, is felony, without benefit of clergy.

BILL *of Lading*, an acknowledgment ſigned by the maſter of the ſhip, and given to a merchant, &c. containing an account of the goods which the maſter has received on board from that merchant, &c. with a promiſe to deliver them at the intended place for a certain ſum of money. Each bill of lading muſt be treble, one for the merchant who ſhips the goods, another to be ſent to the perſon to whom they are conſigned, and the third to remain in the hands of the maſter of the ſhip. It muſt however be obſerved, that a bill of lading is only uſed when the goods ſent on board a ſhip are but part of the cargo; for when a merchant loads a veſſel entirely on his own account, the deed paſſed between him and the maſter of the ſhip is called charter-party. See CHARTER-PARTY.

BILL *of Parcels*, an account given by the ſeller to the buyer, containing the particulars of the goods bought.

BILL *of Sale*, a ſecurity to the lender of a ſum of money, impowering him to ſell the goods, in caſe the ſum borrowed is not repaid with intereſt at the time appointed.

BILL *of Store*, a licence granted at the cuſtom-houſe to merchants, by which they have liberty to carry duty-free all ſuch ſtores and proviſions as the ſhip's crew may have occaſion for during the voyage.

BILL *of Sufferance*, a licence granted to a merchant at the cuſtom-houſe, ſuffering him to trade from one Engliſh ſea-port to another, without paying cuſtom.

BILL, in law, a ſecurity for money under the hand, and ſometimes the ſeal of the debtor. It is of two ſorts, a ſingle bill without or with a penalty; the latter is the ſame as a bond, except its being without a condition.

BILL, a declaration in writing, expreſſing either ſome wrong the complainant has ſuffered from the defendant, or a fault committed by the perſon complained of againſt ſome law or ſtatute.

This bill is ſometimes exhibited to juſtices at the general aſſizes, by way of indictment, or referred to others having juriſdiction; but is more generally addreſſed to the lord chancellor. It contains the fact complained of, the damage ſuſtained, and a petition or proceſs againſt the defendant for redreſs; and is uſed both in criminal and civil caſes. In the former, the words *billa vera* are indorſed by the grand jury upon a preſentment, implying that they find the ſame founded on probable evidence, and therefore worthy of further conſideration.

BILL *in Parliament*, a paper containing propoſitions offered to the houſe to be paſſed by them, and afterwards to be preſented to the king in order to receive the royal aſſent, and become a law.

BILL *of Attainder*. See ATTAINDER.

BILL *of Appeal*. See APPEAL.

BILL *of Mortality*. See MORTALITY.

BILLET-WOOD, ſmall wood for fewel, cut three foot and four inches long, and ſeven inches and a half in compaſs; the aſſize of which is to be enquired of by juſtices.

BILLETING, the quartering of ſoldiers in the houſes of a town or village. Among fox-hunters, it ſignifies the ordure and dung of a fox.

BIND-WEED, *Convolvulus*, in botany. See CONVOLVULUS.

BING, in the alum works, denotes a heap of alum thrown together in order to drain.

BINNACLE, in naval affairs, a wooden caſe ſtanding immediately before the helm on deck, and containing three diviſions, with a ſliding ſhutter to each; the middle of which is for a lamp or candle, and the two ſide ones for the ſea-compaſſes, by which the courſe is ſteered: there are always two on the quarter-deck of a ſhip of war, one being for the helmſman, and the other for the officer who conns or directs him.

BINOMIAL *Root*, in algebra, is a root conſiſting of two parts of members connected with a ſign $+$: thus $x + y$ is a binomial root, conſiſting of the ſum of thoſe two quantities.

BINOMIAL *Theorem*, a general method for raiſing a given quantity to any given power, or extracting any given root thereof, invented by Sir Iſaac Newton, and is of the following form:

$$\overline{P + PQ}^{\frac{m}{n}} = P^{\frac{m}{n}} + \frac{m}{n}AQ + \frac{m-n}{2n}BQ + \frac{m-2n}{4n}CQ + \frac{m-3n}{4n}DQ + \&c.$$

Where $P + PQ$ is the quantity whoſe root or any dimenſion, is to be found; that is expreſſed by an infinite ſeries; P is the firſt term of that quantity; Q the remaining terms divided by the firſt; $\frac{m}{n}$ the index or exponent of the dimenſion P + P Q. Moreover, A, B, C, D, &c. are uſed for the terms found in the quotient, viz. A for the firſt term $P^{\frac{m}{n}}$; B for the ſecond $\frac{m}{n}$ A Q; and ſo on.

The following examples will ſhew this excellent theorem's uſe.

Examp. 1. $\overline{a+x}^{5}$ is equal to $a^5 + 5a^4x + 10a^3x^2 + 10a^2x^3 + 5ax^4 + x^5$: for in this caſe, $P = a$, $Q = \frac{x}{a}$, $m = 5$, $n = 1$, $A = a^5$, $B = 5a^4x$, $C = 10a^3x^2$, $D = 10a^2x^3$, $E = 5ax^4$, $F = x^5$, and $G = 0$.

Examp. 2. $\sqrt{aa + xx}$ or $\overline{aa + xx}^{\frac{1}{2}}$ is equal to $a + \frac{xx}{2a} - \frac{x^4}{8a^3} + \frac{x^6}{16a^5} - \frac{5x^8}{128a^7}$, &c.

In the Philoſophical Tranſactions, No. 230, Mr. de Moivre has given us the following theorem for raiſing an infinite ſeries to a given power m, or extracting the root thereof, viz. $\overline{az + bz^2 + cz^3 + dz^4 + ez^5 + fz^6, \&c.}^{\,m}$ will be $= a^m z^m + \frac{m}{1} a^{m-1} b z^{m+1}$

$$+\left.\begin{array}{l} \frac{m}{1}\times\frac{m-1}{2}\,a^{m-2}\,b^2 \\ +\frac{m}{1}\,a^{m-1}\,c \end{array}\right\} z^{m+2} \quad + \left.\begin{array}{l} \frac{m}{1}\times\frac{m-2}{2}\times\frac{m-3}{3}\,a^{m-3}\,b^3 \\ \frac{m}{1}\times\frac{m-1}{2}\,a^{m-2}\,b\,c \\ \frac{m}{1}\,a^{m-1}\,d \end{array}\right\} z^{m+3}$$

$$+\left.\begin{array}{l} \frac{m}{1}\times\frac{m-1}{2}\times\frac{m-2}{3}\times\frac{m-3}{4}\,a^{m-4}\,b^4 \\ \frac{m}{1}\times\frac{m-1}{2}\times\frac{m-2}{1}\,a^{m-3}\,b^2\,c \\ \frac{m}{1}\times\frac{m-1}{1}\,a^{m-2}\,b\,d \\ \frac{m}{1}\times\frac{m-1}{2}\,a^{m-2}\,c^2 \\ \frac{m}{1}\,a^{m-1}\,e \end{array}\right\} z^{m+4}$$

$$+\left.\begin{array}{l} \frac{m}{1}\times\frac{m-1}{2}\times\frac{m-2}{3}\times\frac{m-3}{4}\times\frac{m-4}{5}\,a^{m-5}\,b^5 \\ \frac{m}{1}\times\frac{m-1}{2}\times\frac{m-2}{3}\times\frac{m-3}{1}\,a^{m-4}\,b^3c \\ \frac{m}{1}\times\frac{m-1}{2}\times\frac{m-2}{1}\,a^{m-3}\,b^2d \\ \frac{m}{1}\times\frac{m-1}{1}\times\frac{m-2}{1}\,a^{m-3}\,b\,c^2 \\ \frac{m}{1}\times\frac{m-1}{1}\,a^{m-2}\,b\,e \\ \frac{m}{1}\times\frac{m-1}{1}\,a^{m-2}\,c\,d \\ \frac{m}{1}\,a^{m-1}\,f \end{array}\right\} z^{m+5}$$

$$\left.\begin{array}{r}
+\frac{m}{1}\times\frac{m-1}{2}\times\frac{m-2}{3}\times\frac{m-3}{4}\times\frac{m-4}{5}\times\frac{m-5}{6}\,a^{m-6}\,b^{6}\\
\frac{m}{1}\times\frac{m-1}{2}\times\frac{m-2}{3}\times\frac{m-3}{4}\times\frac{m-4}{1}\,a^{m-5}\,b^{4}c\\
\frac{m}{1}\times\frac{m-1}{2}\times\frac{m-2}{3}\times\frac{m-3}{1}\,a^{m-4}\,b^{3}d\\
\frac{m}{1}\times\frac{m-1}{2}\times\frac{m-2}{1}\times\frac{m-3}{2}\,a^{m-4}\,b^{2}c^{2}\\
\frac{m}{1}\times\frac{m-1}{2}\times\frac{m-2}{1}\,a^{m-3}\,b^{2}e\\
\frac{m}{1}\times\frac{m-1}{1}\times\frac{m-2}{1}\,a^{m-3}\,b\,c\,d\\
\frac{m}{1}\times\frac{m-1}{1}\,a^{m-3}\,b\,f\\
\frac{m}{1}\times\frac{m-1}{2}\times\frac{m-2}{3}\,a^{m-3}\,c^{3}\\
\frac{m}{1}\times\frac{m-1}{2}\,a^{m-2}\,c\,e\\
\frac{m}{1}\times\frac{m-1}{2}\,a^{m-2}\,d^{2}\\
\frac{m}{1}\,a^{m-1}\,g
\end{array}\right\}\begin{array}{l}z^{m+6}\\ \text{\&c.}\end{array}$$

For underſtanding of which, it is only neceſſary to conſider all the terms by which the ſame power of z is multiplied: in order to which, two things in each of theſe terms muſt be conſidered: 1°. The product of certain powers of the given quantities or coefficients a, b, c, d, &c. and 2°. The unciæ or products of $\frac{m}{1}\times\frac{m-1}{2}$, &c. prefixed to them.

Now to find all the products belonging to the ſame power of z; for example, to find that product whoſe index is $m+r$ (r being any whole number) the ſaid products muſt be diſtinguiſhed into ſeveral claſſes: thoſe which immediately after ſome certain power of a, (by which all theſe products begin) have b, are products of the firſt claſs; as $a^{m-4}b^{3}c$ is a product of the firſt claſs, becauſe b immediately follows a^{m-4}: thoſe which immediately after ſome power of a have c, are products of the ſecond claſs; ſo $a^{m-3}c^{2}d$ is a product of the ſecond claſs: thoſe which immediately after ſome power of a have d, are products of the third claſs, and ſo of the reſt.

This being underſtood, 1°. Multiply all the products belonging to z^{m+r-1} (which immediately precedes z^{m+r}) by b, and divide them all by a. 2°. Multiply by c, and divide by a, all the products belonging to z^{m+r-2} except thoſe of the firſt claſs. 3°. Multiply by d, and divide by a, all the products belonging to z^{m+r-3} except thoſe of the firſt and ſecond claſs. 4°. Multiply by e, and divide by a, all the terms belonging to z^{m+r-4}, except thoſe of the firſt, ſecond, and third claſs; and ſo on, till you meet twice with the ſame term. Laſtly, add the product of a^{m-r} into the letter whoſe exponent is $r+1$ to all thoſe terms.

Note, The exponent of a letter is the number expreſſing what place that letter has in the alphabet, as 3 is the exponent of the letter c.

By this rule it is manifeſt that it is eaſy to find all the products belonging to the ſeveral powers of z, if you have but the product belonging to z^{m}, viz. a^{m}.

Now, to find the unciæ prefixed to every product, you muſt conſider the ſum of the units contained in the exponents of the letters that compoſe it; (the index of a excepted) when write as many terms of the ſeries $m\times\overline{m-1}\times\overline{m-2}\times\overline{m-3}$, &c. as there are units in the ſum of the indexes; this ſeries is to be the ſum of the numerator of a fraction, whoſe denominator is the product of the ſeveral ſeries $1 \times 2 \times 3 \times 4 \times 5$, &c. $1 \times 2 \times 3 \times 4 \times 5$, &c. $1 \times 2 \times 3 \times 4 \times 5 \times 6$, &c. the firſt of which contains as many terms as there are units in the index of b; the ſecond as many as there are units in the index of c; the third as many as there are units in the index of d, &c.

The demonſtration of this ſee in the before recited Tranſaction.

BIOGRAPHY, a very inſtructive ſpecies of hiſtory, containing the lives of remarkable perſons. A ſcience with which we have enriched this dictionary of arts and ſciences.

BIQUADRATIC, the fourth power of any number or quantity.

BIQUADRATIC EQUATION, in algebra, an equation where the unknown quantity has four dimenſions. Thus $x^4 + ax^3 + bx^2 + cx + d = 0$, is a biquadratic equation, becauſe the term x^4 is of four dimenſions. See EQUATION.

BIQUINTILE, an aſpect of the planets, when they are 144 degrees diſtant from each other.

BIRCH-TREE. See BETULA.

BIRD, *Avis*, in zoology, one of the ſix general claſſes of animals, the characters of which are, that their body is covered with feathers, that they have two wings, two legs, and a bill of a horny ſubſtance; the females likewiſe are all oviparious. The knowledge of birds, of the orders and genera into which they are ſubdivided, and of their natures, uſes, figures, &c. conſtitutes a particular ſcience, under the name of ornithology. Birds have been uſually divided into terreſtrial and aquatic, or land and water birds; but this ſubdiviſion is too general, as well as indeterminate; a much more certain diſtinction of birds is founded on different ſhapes and ſtructure of their beaks, from which alone they are naturally arranged under the ſix following orders: 1. The *accipitres*, or thoſe which have the beak uncinated, or hooked. 2. The *picæ*, or thoſe with convex and compreſſed beaks. 3. The *anſeres*, or thoſe with dentated or ſerrated beaks. 4. The *ſcolopaces*, or thoſe furniſhed with ſubcylindric and obtuſe beaks. 5. The *gallinæ*, comprehending ſuch birds as have the beak of a conic form, but crooked, and the upper chap imbricated. 6. The *paſſeres*, or thoſe with conic and attenuated beaks.

We meet with ſeveral other diſtinctions of birds, taken from their manner of feeding; as carnivorous ones, or birds of prey; frugivorous and granivorous birds, or ſuch as feed on fruits, and the ſeed of various plants; inſectivorous birds, or thoſe which feed principally on inſects; and ſo in other caſes.

BIRDS, in heraldry, repreſent either the contemplative or active life, according as the different kinds are uſed. They are the emblems of liberty, expedition, readineſs, ſwiftneſs and fear. They are more honourable bearings than fiſhes, becauſe they participate more of the air and fire, the two nobleſt elements, and at the ſame time, higher than thoſe of earth and water.

Birds ſhould be borne in coat armour in a manner ſuitable to their actions, as going, ſitting, ſtanding, flying, &c.

Birds that are either whole footed, or have their feet divided, and yet have no talons, are ſaid to be membered; but the cock, and all birds of prey with ſharp and hooked beaks and talons for encounter or defence, are termed armed. In the blazoning of birds, if their wings be not diſplayed, they are ſaid to be borne cloſe; as, he beareth an eagle, &c. cloſe.

BIRD-LIME, a viſcid ſubſtance, prepared after different ways. The moſt common bird-lime among us is made from holly-bark, boiled ten or twelve hours; when the green coat being ſeparated from the bark, it is covered up a fortnight in a moiſt place, then pounded into a tough paſte, ſo that no fibres of the wood are diſcernable, and waſhed in a running ſtream till no motes appear, put up to ferment four or five days, ſkimmed as often as any thing ariſes, and laid up for uſe. To uſe it, a third part of nut oil, or thin greaſe, muſt be incorporated with it over the fire.

* BIRMINGHAM, a very large and populous town in Warwickſhire, is pleaſantly ſituated on the ſide of a hill, forming nearly a half-moon. It is about two miles in length, (including the hamlet of Deritend and Bordſley) nearly the ſame in breadth, and about ſix miles in circumference; and contains by computation about fifty thouſand inhabitants, moſt of whom are employed in the trade of iron and ſteel work, Bath-metal toys, and many other uſeful branches, for which they are ſuch ingenious artificers, that their performances are admired, not only at home, but in foreign parts, where they are held in high eſtimation, and for their excellence, exquiſite workmanſhip, and extreme cheapneſs, cannot be ſurpaſſed, perhaps not equalled, in any part

of the known world; of which there cannot be a greater proof than in the frequent honours conferred on this place by the viſits of ſeveral royal and noble perſonages, drawn hither by curioſity, to view the beauties of its flouriſhing manufactories. In the ſeſſion of 1773, an act paſſed for the eſtabliſhing an Aſſay Office in this town, which has extended the manufacture of plate to a great degree.

Such a ſpirit of induſtry reigns amongſt all ranks of people here, that every individual contributes to the execution of ſome of the uſeful or ornamental mechanic arts, of which ſuch an infinite variety are here carried on; the women, and even children, earning their livelihood, by aſſiſting in the fabrication of toys, trinkets, &c. &c. Nor is the education of the riſing generation in the uſe of letters hereby left unattended to, evening-ſchools being kept in every part of the town, to which the little artiſts reſort, for the inſtruction of their tender minds, after they have performed their bodily labour. The houſes in this town fall little ſhort of eight thouſand, (beſides a great number of work-ſhops, ware-houſes, &c.) and are continually encreaſing. They are in general handſome brick buildings; and the dwellings of the gentry, merchants, and capital traders, are very elegant manſions. Here are two churches, one called St. Martin's, and the other St. Philip's; the former is an ancient building, with a lofty ſpire, and twelve good bells; the latter a grand modern ſtructure, having a fine tower, with ten bells, and a handſome cupola above it, and ſtands in one of the fineſt church-yards in Europe, encompaſſed round with a wall, and laid out with ſeveral pleaſant walks, for contemplation and amuſement: in each ſteeple is a ſet of muſical chimes, which play every three hours, and a different tune every day in the week. Beſides theſe, there is a chapel of eaſe, called St Bartholomew's chapel; and an act of parliament has been lately obtained for building two other chapels, one of which is nearly finiſhed. There are likewiſe two meeting-houſes for Preſbyterians, one of which is a new and very handſome fabric; one for quakers; and three for other diſſenters.—Here are alſo three free-ſchools, one of which, ſituate in New-ſtreet, is a noble ſtructure, founded by king Edward VI. (whoſe effigy is placed in a niche over the entrance) in which about 130 children are educated in Latin, Engliſh, writing, and arithmetic, under the tuition of two maſters and an aſſiſtant for the firſt claſs, an Engliſh maſter, and a writing maſter; and to theſe a French maſter has been lately added, to inſtruct the young ſtudents in that polite branch of literature. The ſecond ſchool (ſituate in St. Philip's church-yard) was founded in the year 1724: it is ſupported by the munificence and voluntary contributions of the well-diſpoſed inhabitants of the town, together with divers legacies that are bequeathed to it. In this ſchool 50 boys and 30 girls are wholly maintained and educated; they are admitted from ſeven to ten years old, and when fourteen, are put apprentices to trades or ſervices: the boys are inſtructed in Engliſh, writing, and accompts, as are likewiſe the girls, with the addition of needle-work. The third (ſituate in Old Meeting-ſtreet) is a late inſtitution, ſupported chiefly by a voluntary ſubſcription among the Proteſtant diſſenters, in which 27 children are maintained, cloathed, and educated; and apprenticed out at proper ages. There is a weekly market here on Thurſdays, which is plentifully ſupplied from the country with every article of proviſions, and well ſtored with live cattle of all kinds; and two fairs yearly, on the Thurſday in Whitſun-week, and on the 29th of September, for hardware, black cattle, horſes, ſheep, hogs, &c. Being no corporation town, it is governed by two bailiffs, two conſtables, and a headborough, and is free for any perſon to come and ſettle in; which perhaps not a little contributes to the increaſe of its trade, building, and inhabitants.

It would be unpardonable not to mention the grand navigable cut that was begun in April, 1768, and compleated in November, 1769, to the colleries at Wedneſbury, from whence the inhabitants here are ſupplied with exceeding good coals, at a moderate expence, which before were ſold at an exhorbitant rate, to the great diſtreſs and detriment of the poor: it was, in 1772, extended to Autherly, from whence a communication is opened through the Severn to Shrewſbury, Gloceſter, and Briſtol, and through the Trent to Gainſborough and Hull, from which places goods are brought by water, at a much leſs rate than the former coſt of land-carriage; and many hands are now employed in extending the communication to Liverpool, through the Merſy. Theſe, however, are not the only advantages reaped from this truly uſeful work; the inhabitants of this town, as well as thoſe of the country through which the navigation runs, being accommodated with moſt agreeable walks, for many miles together, along the canal's delightful banks. It is nineteen miles north-weſt of Coventry, forty-three ſouth-eaſt of Shrewſbury, and one hundred and ten north-weſt of London. Long. 1'. 35 W. Lat. 52. 30. N.

BIRTH, *Partus*, in midwifery. See Delivery.

An immature birth, or that which happens before the uſual time of pregnancy is compleated, is otherwiſe called an abortion. See Abortion.

BIRTH, in navigation, the ſituation in which a ſhip rides at anchor, or the diſtance between a ſhip and any adjacent object. Birth alſo ſignifies the apartment in which any number of the officers or crew eat and ſleep: in a ſhip of war there is commonly one of theſe between every two guns.

BIRTHWORT, in botany, a plant. Three ſorts of which are kept in the ſhops, diſtinguiſhed by the epithets *round*, *long*, and *creeping*, from the different forms of the roots, the only parts uſed in medicine. In taſte they are all bitter and aſtringent, but in different degrees: the long is much the weakeſt, and the ſlender-rooted ſort the ſtrongeſt. Hence they differ alſo in medicinal virtue. Simon Paulli obſerves particularly of the long-rooted, that a decoction of it in the diſtilled waters of veronica is of excellent ſervice againſt ulcerations on the ſhin-bone, and ſays he has received the thanks of many ſurgeons for the communication of this medicine.

BISHOP, a prelate, or perſon conſecrated for the ſpiritual government of a dioceſe.

A biſhop is the higheſt eccleſiaſtical dignitary, the chief officer in the hierarchy or œconomy of church government.

Anciently there appears to have been but one biſhop in a church; the titles of which ſupreme officer are reckoned up by Cyprian, and are, biſhop, preſident, paſtor, governor, ſuperintendant, and prieſt. And as there was but one biſhop to a church, ſo there was but one church to a biſhop, as appears from hence, that the ancient dioceſes are never ſaid to contain churches in the plural, but only a church in the ſingular: for authors ſpeak of the church of Corinth, the church of Smyrna, the church of Philadelphia, the church of Antioch, &c. The word dioceſe, by which a biſhop's flock is now uſually expreſſed, is never uſed in that ſenſe by the writers of the three firſt centuries; but the biſhop's cure is frequently denoted by the Greek word *Paroikia*, pariſh: as appears from the ſynodical Epiſtle of Irenæus to pope Victor, and from numberleſs places of Euſebius's Eccleſiaſtical Hiſtory. The peculiar acts of the epiſcopal function were, preaching the word, praying with his people, adminiſtering the two ſacraments of baptiſm and the euchariſt, taking care of the poor, ordaining of miniſters, governing his flock, excommunicating offenders, and abſolving of penitents.

The earlieſt account we have of Engliſh biſhops is carried up no higher than the council of Arles, aſſembled by the emperor Conſtantine, in the fourth century; at which were preſent the biſhops of London, York, and Caerleon. Before the Norman Conqueſt, biſhops were choſen by the chapters, whether monks or prebendaries. From the Conqueror's time to the reign of king John, it was the cuſtom to chuſe biſhops, at a public meeting of the biſhops and barons, the king himſelf being preſent at the ſolemnity, who claimed a right of inveſting the biſhops, by delivering to them the ring and paſtoral ſtaff. It is true, the popes endeavoured to gain the election of biſhops to themſelves; and this occaſioned great ſtruggles and conteſts between the Roman pontiffs and our kings. At length, after various diſputes between king John and the pope, the former, by his charter, A. D. 1215, granted the right of election to the cathedral churches. A ſtatute in the reign of Henry VIII. ſettled the election of biſhops as follows: "The king, upon the vacancy of the ſee, was to ſend his *conge d'elire* to the dean and chapter, or prior and convent, and in caſe they delayed the election above twelve days, the crown was empowered to nominate the perſon by letters patent. And after the biſhop thus elected had taken an oath of fealty to the king, his majeſty, by his letters patent under the broad ſeal, ſignified the election to the archbiſhop, with orders to confirm it, and conſecrate the elect. And laſtly, if the perſons aſſigned to elect and conſecrate deferred the performing their reſpective offices twenty days, they were to incur a præmunire." But a ſtatute of

Edward VI. made a change in the manner of electing biſhops, and transferred the choice wholly from the deans and chapters to the crown.

By the ſtatute it is enacted, that "For the future no *conge d'elire* ſhall be granted, nor any election be made by the dean and chapter, but that the archbiſhopric or biſhopric ſhall be conferred by the king's nomination in his letters patent." But this alteration made by the ſtatute of king Edward is no longer in force; and the cuſtom of ſending down the *conge d'elire* or leave to elect, is reſtored.

Upon the vacancy of a biſhop's ſee, the king grants a licence, or *conge d'elire*, under the great ſeal, to the dean and chapter, to elect the perſon whom by his letters miſſive he hath appointed; and they are to chooſe no other. The dean and chapter having made their election accordingly, certify it under their common ſeal to the king, and to the archbiſhop of the province, and to the biſhop thus elected: then the king gives his royal aſſent, under the great ſeal, directed to the archbiſhop, commanding him to confirm and conſecrate the biſhop thus elected. The archbiſhop then ſubſcribes his *fiat confirmatio*, and grants a commiſſion to the vicar-general to perform all the acts requiſite thereto: who thereupon iſſues out a ſummons to all perſons who may object to the election, to appear, &c. which citation is affixed on the door of Bow-church. At the time and place appointed, the proctor for the dean and chapter exhibits the royal aſſent, and the commiſſion of the archbiſhop, which are both read, and accepted by the vicar-general. Then the new biſhop is preſented by the proctor of the vicar-general; and three proclamations being made for the oppoſers of the election to appear, and none appearing, the vicar-general confirms and ratifies the choice of the perſon elected; who takes the oaths of ſupremacy, canonical obedience, and that againſt ſimony. Till this act of confirmation is performed the biſhop elect may be rejected, becauſe there may be reaſons aſſigned why he ſhould not be made a biſhop; which is the reaſon of the abovementioned citations and proclamations.

After confirmation, the next thing to be done is conſecration; which the archbiſhop performs by the impoſition of hands and prayer, according to the form laid down in the Common-prayer-book; which done, the biſhop is complete, as well in relation to ſpiritualities as temporalities.

A biſhop of England is a peer of the realm, and ſits and votes in the houſe of lords. He is a baron in a threefold manner, viz. feudal, in regard to the temporalities annexed to his biſhopric; by writ, as being ſummoned by writ to parliament; and by patent and creation. Accordingly he has the precedence of all other barons, and votes both as baron and biſhop. But though their peerage was never denied, it has been conteſted whether the biſhop has a right to vote in criminal matters. At the trial, however, of lord Byron for the murder of Mr. Chawworth, they inſiſted upon their right of voting, though they choſe to wave that right, not chooſing to be concerned in ſhedding of blood. The juriſdiction of a biſhop, in England, conſiſts in collating to benefices; granting inſtitutions on the preſentation of other patrons; commanding induction; taking care of the profits of vacant benefices for the uſe of the ſucceſſors; viſiting his dioceſe once in three years; in ſuſpending, depriving, degrading, and excommunicating; in granting adminiſtrations, and taking care of the probate of wills: theſe parts of his function depend upon the eccleſiaſtical law. By the common law, he is to certify the judges touching legitimate and illegitimate births and marriages. And to his juriſdiction, by the ſtatute law, belongs the licenſing of phyſicians, ſurgeons, and ſchool-maſters; and the uniting ſmall pariſhes; which laſt privilege is now peculiar to the biſhop of Norwich.

* BISHOPS-CASTLE, a town in Shropſhire, it has a good market on Fridays, and ſix fairs, held on the Friday before February 13, on the Friday before Good-Friday, the firſt Friday after May-day, July 5, September 9, and November 13, for ſheep, horned cattle, and horſes. It is ſeated not far from the river Clun, and is an ancient corporation, enjoying great privileges. This town is governed by a bailiff, recorder, and fifteen aldermen, out of whom the ſaid bailiff is choſen yearly, and is a juſtice of the peace and quorum that and the enſuing year. The members of parliament are choſen by a majority of the burgeſſes and inhabitants. It is ſeventeen miles ſouth-weſt of Shrewſbury, and one hundred and fifty-two north-weſt of London. Long. 2. 25. W. Lat. 52. 30. N.

BISHOP's-COURT, an eccleſiaſtical court, held in the cathedral of each dioceſe by the biſhop's chancellor, who judges by the civil and canon law; and if the dioceſe be large, he has commiſſaries in remote parts, who hold what they call conſiſtory courts, for matters limited to them by their commiſſion.

BISHOPRIC, a dioceſe, or the diſtrict over which a biſhop's juriſdiction extends.

BISKET, or BISCUIT, a kind of bread uſed in the ſea-ſervice, eſpecially in long voyages.

Biſket, in order to be good, ſhould be made ſix months before it is put on board a ſhip; it ſhould alſo be made of good wheat flour, thoroughly cleaned from the bran.

BISKET, among confectioners, a kind of bread made of fine flour, eggs and ſugar, with the addition of roſe or orange-flower water. Sometimes aniſeeds, carraway ſeeds, preſerved orange, citron, or lemon peel, are added, and the different compoſitions diſtinguiſhed by different names, as ſeed-biſket, long-biſket, round-biſket, Naples-biſket, ſpunge-biſket, &c.

BISMUTH, or TIN-GLASS, in natural hiſtory, a ſparkling white ſemi-metal, very ponderous, conſiderably hard and ſonorious, extremely brittle, without any degree of malleability, falling in pieces under the hammer, and reducible by triture into fine powder. When broke, the ſurface of the fracture appears compoſed of bright plates or flakes, larger than thoſe of the other ſemi-metals. In its external appearance, it has a great reſemblance to regulus of antimony and zinc, differing little otherwiſe than in the largeneſs of the plates, and in its contracting a yellowiſh caſt on the ſurface expoſed to the air. In its intrinſic properties, it is extremely different; melting far more eaſily, not evaporating ſo readily, being differently acted upon by acids, producing different effects upon other metallic bodies, &c.

The nitrous acid diſſolves biſmuth with great efferveſcence, and a copious diſcharge of yellow corroſive fumes. The ſolution, if the biſmuth has not been too haſtily added to the acid, proves colourleſs and tranſparent: diluted with a large quantity of water, it becomes milky, and depoſits, on ſtanding, a fine white precipitate, or magiſtery; which edulcorated by repeated effuſions of water, is employed as a coſmetic, both in waſhes and pomatums, under the name of Spaniſh or pearl white.

Magiſtery of BSIMUTH. There are ſundry variations in preparing this magiſtery. Some take aqua regia for the menſtruum; and for the precipitant, a ſolution of ſea ſalt, alcalies, ſpirit of wine, &c. Some mix with the ſolution of biſmuth, a ſolution of benzoin in ſpirit of wine, and thus obtain a magiſtery compoſed of calx of biſmuth and benzoin. Others add a ſolution of chalk to the metalline ſolution, and precipitate both together with alcalies. The magiſtery appears to have ſome latent corroſive quality; and when freely uſed as a fucus, not to be entirely innocent: it gradually impairs the natural complexion, and leaves, for old age, a coarſe and diſagreeable ſkin. The peruke makers are ſaid to employ it in their pomatums, for giving a whiteneſs to grey, reddiſh, yellow, or other coloured hair; and Pomet obſerves, that a ſhower of rain will waſh off this adventitious whiteneſs. I have been informed alſo, that thoſe who bleach hair in England make uſe of this magiſtery; and therefore I determined to examine by experiment its effects upon hair. Experiment ſatisfied me that the report was groundleſs; that the magiſtery of biſmuth does not whiten hair, but darken it; that it changes the whiteſt flaxen hair firſt to a yellowiſh, then to a yellowiſh brown, afterwards to a dark brown, and at laſt to a black. The trial may be made in two ways; by boiling the hair in water along with the magiſtery; or by applying the magiſtery mixed with pomatum, and hanging the hair in the ſun: the oftener this is repeated, the darker will the colour be. We may judge from hence, that this magiſtery is leſs fit for the purpoſes of a coſmetic, than it is generally ſuppoſed to be. The magiſtery itſelf has been commonly believed to change its colour in the ſun, and hence it is directed to be dried cautiouſly in a ſhady place: but it did not appear to have ſuffered any conſiderable alteration in being expoſed to the ſun for two months. It is apt, however, in length of time, to turn yellowiſh; and hence a large ſtock ſhould not be prepared at once. *Neumann's Chemiſtry*.

BISSECTION, in geometry, the dividing a line, angle, &c. into two equal parts.

BISSEXTILE, in chronology, a year conſiſting of 366 days, being the ſame with our leap-year. The day alſo, which is this year added, is called biſſextile.

The true ſolar year, or that ſpace of time which flows while the ſun is moving from any one point of the ecliptic till he returns again to the ſame point, conſiſts of 365 days, 5 hours, 48 minutes, 57 ſeconds. But the year made uſe of by the ancient Egyptians, conſiſted of 365 days only, which being about ſix hours leſs than the true ſolar year, they loſt a day nearly every four years. This inconveniency did not eſcape the obſervation of Julius Cæſar, who being then high prieſt among the Romans, ordered that every fourth year ſhould have an additional or intercalary day, and the ſixth of the calends of March ſhould be that year reckoned twice: and hence both the intercalary day, and the year when it happened, were called biſſextile. This method of computation is called the Julian account, or Old Style.

But as the true ſolar year conſiſts of 365 days, 5 hours, 49 minutes nearly, it follows that, according to this way of reckoning, the civil year will, at the end of every four years, begin 44 minutes ſooner than it did before, and conſeqently it will, in 331 years, anticipate one whole day. This induced pope Gregory XIII. in the year 1582, to attempt a reformation of the calendar; and finding that the equinox had been anticipated, ſince the Nicene council held in the year 325, ten whole days, he ordered that theſe ten days ſhould that year be taken out of the calendar, and that the 11th of March ſhould be called the 21ſt. He alſo ordered, that every hundredth year, which according to the Julian form was to be biſſextile, ſhould be a common year, conſiſting of 365 days only: but becauſe this was too much, every four hundredth year was to remain biſſextile. This method of computation is called the Gregorian account, or New Stile; and was immediately followed in moſt foreign countries. Great Britain however ſtill followed the Old Style, till the year 1752, during which interval one day more was anticipated. It was therefore ordered, by act of parliament, that eleven days ſhould that year be taken out of the calendar, and that the natural day following the ſecond of September, ſhould be called the fourteenth, omitting the intermediate eleven days; and that the New Stile ſhould for the future be obſerved. By this correction the feaſts and faſts of the church are now kept according to the original deciſion of the council of Nice.

BISTORTA, biſtort or ſnakeweed, in botany, a plant, the root of which is bent and jointed, commonly about the thickneſs of the finger, ſurrounded with buſhy fibres, of a blackiſh brown colour on the outſide, and reddiſh within: it is diſtinguiſhed from the roots of the other biſtorts, by being leſs bent; that of the officinal ſpecies having only one or two bendings, and thoſe of the others three or more. This root has a ſtrong aſtringent taſte, without any manifeſt ſmell, or particular flavour. It is one of the ſtrongeſt of the vegetable ſtyptics, and frequently made uſe of as ſuch, in diſorders proceeding from a laxity or debility of the ſolids, for reſtraining alvine fluxes, after due evacuations, and other preternatural diſcharges, both ſerous and ſanguineous. It has been ſometimes given in intermitting fevers; and ſometimes alſo in ſmall doſes, as a corroborant and antiſeptic, in acute, malignant, and colliquative fevers; in which intentions, Peruvian bark has now deſervedly ſuperſeded both this and all the other aſtringents. The common doſe of biſtort root, in ſubſtance, is fifteen or twenty grains: in urgent caſes, it is extended to a dram.

BISTOURY, in ſurgery, an inſtrument for making inciſions, of which there are different kinds, ſome being of the form of lancets, others ſtraight and fixed in the handle like a knife, and others crooked with the ſharp edge on the inſide.

BISTRE, among painters, ſignifies the burnt oil extracted from the ſoot of wood.

Biſtre may be prepared with great eaſe in the following manner.

Take any quantity of ſoot of dry wood, but let it be of beech wherever that can be procured. Put it into water in the proportion of two pounds to a gallon; and boil them half an hour: then, after the fluid has ſtood ſome little time to ſettle, but while yet hot, pour off the clearer part from the earthy ſediment, at the bottom; and if on ſtanding longer it forms another earthy ſediment, repeat the ſame method, but this ſhould be done only while the fluid remains hot: evaporate then the fluid to dryneſs; and what remains will be good biſtre, if the ſoot was of a proper kind. The goodneſs of biſtre may be perceived by its warm deep, brown colour, and tranſparency when moiſtened with water.

BIT, or BITT, an eſſential part of a bridle, and of which thoſe are of various kinds. The ſeveral parts of a ſnaffle, or curb-bit, are the mouth-piece, the cheek and eyes, guard of the cheek, head of the cheeks, the port, the welts, the campanel or curb and hook, the boſſes, the bolſters and rabbets, the water-chains, the ſide-bolts, bolts and rings, kirbles of the bit or curb, trench, toprol, flap, and jeive.

BIT, the iron part of a piercer, augre, and the like inſtruments.

BIT *of a Key*, the part which contains the wards.

BITS, in naval architecture, ſtrong pieces of ſquare timber let down through, and fixed in holes of, the decks above and below, called mortiſes, and bolted to the beams. There are ſeveral bits in a ſhip, the principal of which are thoſe for the cable. Of theſe, in ſhips of war there are commonly two pair; and when they are both uſed at once, the cable is ſaid to be double-bitted. See *Freſhen the* HAWSE, SERVICE. To bit the cable is to put the double part or bight of it round the bits. The other bits are of a ſmaller kind for faſtening the topſail-ſheets. See QUARTER-BLOCK.

BITTER, *Amarus*, an oppoſite taſte to ſweetneſs.

Bitters are accounted ſtomachic and cleanſing, and are ſaid to reſiſt putrefaction, correct acidities, and aſſiſt digeſtion; though there are not wanting ſome who will have them to be hurtful to the ſtomach, except in ſo far as their aſtringency contributes to brace the fibres.

BITTER-APPLE, in botany, a name given to the colocynthis. See COLOCYNTHIS.

BITTERN, in ornithology, the name of a bird of the heron kind, called by authors, ardea ſtellaris; and by ſome taurus, botaurus, butorius, and ocnus.

In Engliſh, the butter-bump, and mire-drum, being nearly of the ſize of a common heron, it makes a very remarkable noiſe, which it repeats either three or five times. It is heard only in the building time, which begins in February. The common people, from the ſingularity of the noiſe, think the bird, in order to make it, ſticks its beak in a reed, or in the mud. It is commonly found in ſedgy and reedy places, near the waters, and ſometimes in hedges. Towards autumn this bird flies very high in an evening after ſun ſet, riſing with a ſpiral aſcent, till quite out of ſight; and as they riſe they make an odd noiſe, not at all like their uſual note. This they repeat alſo very often, as they are on the wing in the night; and hence they are called by ſome, though improperly the night-raven. It builds on the ground, and lays five or ſix eggs, which are roundiſh, and of a greeniſh white. When wounded, and going to be taken, it ſtrikes at the perſon's eye, and ought therefore to be carefully guarded againſt.

BITTERN, in the ſalt-works, a liquor left after the boiling and cryſtallizing of the ſalt, of a nauſeous bitter taſte.

BLACK, a well known colour, ſuppoſed to be owing to the abſence of light; and the rays thereof being imbibed by the black bodies. See COLOUR and LIGHT.

Black bodies are not only warmer, but more inflammable than others, as is proved by various experiments; for which the curious may conſult Boyle, and other philoſophers who have treated of this ſubject.

BLACK, among dyers, one of the five ſimple and mother colours uſed in dying. It is made differently, according to the ſeveral qualities of the ſtuffs that are to be dyed. For ſtuffs of a high price, as woollen cloth, and ell and a half or an ell and a quarter wide, broad and narrow ratteens, fine woollen druggets, &c. they muſt uſe a black made of the beſt woad and indigo, inclining to a bluiſh brown. The goodneſs of the compoſition conſiſts in there being not above ſix pounds of indigo ready prepared to each ball of woad, when the latter, being in the tub, begins to caſt its blue flower; and in not being heated for uſe above twice; after which it muſt be boiled with alum, tartar, or aſhes of lees of wine: then maddered with common madder; and laſtly, the black muſt be given with gall-nuts of Aleppo, copperas, and ſumach. As for more indifferent ſtuffs, ſuch as ſmall ratteens and ſhalloons, as they cannot pay for the expence of maddering, it is ſufficient that they be well boiled with woad, and afterwards be blacked with gall and copperas. There is likewiſe the Jeſuit's black, which is made with the ſame ingredients as the good black, but without having firſt dyed the ſtuff blue.

German BLACK, called by ſome Frankfort black, is made of the lees of wine, burnt, waſhed afterwards in water, then ground in mills made for that purpoſe, with ivory, bones, or peach-ſtones, alſo burnt.

Bone-BLACK is made with the bones of oxen, cows, &c. and is uſed in painting;

ing; but it is not ſo much eſteemed as ivory-black.

Hart's BLACK is that which remains in the retort after the ſpirits, volatile ſalt, and oil, have been extracted from hart's-horn. It anſwers the purpoſes of painters almoſt as well as ivory-black.

Spaniſh BLACK is but burnt cork; it is uſed in ſeveral works.

Earth-BLACK, a ſort of coals found in the ground, which the painters and limners uſe to paint in freſco, after it has been well ground.

There is alſo a black made with gall-nuts, copperas, or vitriol, ſuch as common ink: and a black made with ſilver and lead, which ſerves to fill up the cavities of engraved things.

Lamp-BLACK is the ſoot of oil collected as it is formed by burning. It is the principal black at preſent uſed in all nicer kinds of painting; for notwithſtanding ivory-black far ſurpaſſes this in colour, the groſs and adulterate preparation of all that is to be now obtained has occaſioned it to be greatly rejected.

Ivory-BLACK, the coal of ivory or bone, formed by giving them a great heat, all acceſs of air to them being excluded. It is, when pure and genuinely prepared from the ivory, a full clear black; and would be the moſt uſeful of any, in every kind of painting, but that it is apt to dry ſomewhat too ſlowly in oil. At preſent, nevertheleſs, being prepared only by thoſe who manufacture it from bones in very large quantities for coarſe uſes, and ſell it at an extreme low price, it is ſo groſly levigated, being ground only in hand or horſe-mills, and adulterated moreover copiouſly with charcoal duſt, which renders it of a blue caſt, that it is wholly exploded from all more delicate purpoſes, and lamp-black uſed in the place of it, though inferior, with regard to the purity and clearneſs of the black colour, to this when good.

The goodneſs of ivory-black may be perceived by its full black colour, not inclining too much to blue; and by its fineneſs as a powder.

Blue-BLACK is the coal of ſome kind of wood, or other vegetable matter, burnt in a cloſe heat where the air can have no acceſs. The beſt kind is ſaid to be made of vine ſtalks and tendrils.

Currier's BLACK ſignifies a teint or dye laid on tanned leather; of which there are uſually two, the firſt made of galls, ſour ale, and old iron; the ſecond of galls, copperas, and gum arabic.

BLACK-BIRD, *Merula*, in ornithology. See MERULA.

BLACK *Flux*, in mineralogy, a flux uſed in the aſſaying of ores, and is made as follows:—Take one part of nitre, and two parts of common tartar; reduce each to powder, mix them together, and deflagrate the whole in a crucible, by lighting the mixture at the top; which thus turns to a kind of alkaline coal, that is to be pulverized and kept in a cloſe glaſs, to prevent its diſſolving, as it would do in a moiſt air. This flux is of general uſe; and to have it ready at hand, ſhortens the buſineſs of making aſſays in metallurgy, and renders the operation more exact, than when crude tartar and nitre are employed.

BLACK *Tin*, in mineralogy, a denomination given to the tin-ore when dreſſed, ſtamped, and waſhed ready for the melting houſes, where it is refined into a pure metal.

BLACK, in heraldry, is called ſable. See SABLE.

BLACK, in horſemanſhip. Black horſes are very beautiful, eſpecially when they are of a jet ſhining black, and well marked, and have not too much white: for as a great deal of white, eſpecially when it ſpreads round their eyes, and a great way up their legs, adds nothing to their beauty, ſo neither does it add any thing to their goodneſs. The Engliſh black horſes have more white than the black horſes of any other country. A ſtar or blaze, and ſometimes a white muzzle, and one or more of the feet tipped with white, always looks beautiful and lively, and is no diminution to the goodneſs of a horſe, but rather an addition, from an opinion that horſes without any mark are generally ſtubborn and ill-conditioned. I have found many of the Engliſh black horſes, eſpecially of the largeſt breed, not ſo hardy as the bays and cheſnuts, &c. Thoſe that partake moſt of the brown, are generally the ſtrongeſt in conſtitution. *Gibſon on Horſes.*

BLACK-STRAKES *of a Ship*, the planks immediately below the bends, which are covered always with tar mixed with a black powder, and form an agreeable contraſt to the white bottom below, and the ſcraped planks covered with turpentine above.

* BLACK, or EUXINE SEA, between Europe and Aſia, is bounded by Tartary on the north, by Circaſſia, Mingrelia,

gitelia; and Georgia, on the eaſt, by Natolia on the ſouth, and by Romania, Bulgaria, and Beſſarabia, on the weſt. It is five hundred and eighty miles in length, and three hundred in breadth where broadeſt. It receives ſeveral large rivers, as the Danube; which firſt receives a great number of rivers, from ſeveral countries in Europe, the Neiſter, the Nieper, the Don, the Copo, and the Phaſis. The prodigious quantity of water diſcharged by theſe rivers into this ſea has puzzled many ingenious naturaliſts, to account for its not riſing any higher, ſince the only outlet is the Thracian Boſphorus, which is nothing near ſo large as any of the rivers before mentioned. Hence they concluded that the Black Sea muſt empty itſelf by ſubterranean channels, which they imagined might run through Aſia and Europe. But they forgot the principal cauſe which preſerves the equilibrium of the waters in general, which is the evaporation by the heat of the ſun. To this may be added the action of the winds, which doubtleſs carry off great quantities of watery particles; for it is well known that wet cloaths, expoſed to a briſk wind, will ſoon become dry, which can be from no other reaſon than from its carrying off the moiſture. The Black Sea is entirely ſurrounded by the grand ſeignor's dominions, and he enjoys the ſole navigation of it, though it is ſometimes diſturbed by the excurſions of the Coſſacks, who iſſue out of the mouth of the Nieper, and make great ravages on the coaſts of Turky. The Turks reckon it a very tempeſtuous ſea, whence it has the name of the Black Sea. But what renders it moſt dangerous is the want of good harbours to put into in caſe of a ſtorm, for there are but few of theſe in its whole circuit.

* BLACK-FRIARS BRIDGE, was determined on in 1759, and opened for paſſengers November 19, 1766.

BLADDER, *veſica urinaria*; in anatomy, a kind of membraneous and fleſhy pouch or bottle, capable of dilatation and contraction, ſituated in the lower part of the abdomen, immediately behind the ſymphaſis of the oſſa pubis, and oppoſite to the beginning of the inteſtinum rectum. The figure of it is nearly that of a ſhort oval. It is broader on the fore and back ſides than on the lateral parts; rounder above than below, when empty; and broader below than above when full.

It is divided into the body, neck, and bottom; into an interior, poſterior, and two lateral parts. The upper part is termed the fundus or bottom, and the neck is a portion of the lower part, which is contracted like the gullet of ſome veſſels.

The bladder is made up of ſeveral coats, almoſt like the ſtomach. That part of the external coat which covers the upper, poſterior, and lateral ſides of the bladder, is the true lamina or membrane of the peritonæum; and the reſt of it is ſurrounded by a cellular ſubſtance, by the intervention of which the peritonæum is connected to the muſcular coat. The proper coats are three in number, one muſcular, one nervous, and one villous, which is the innermoſt. The lower part of the bladder, which deſerves the name of fundus much better than the upper part, is perforated by three openings, one anterior and two poſterior. The anterior opening is formed by an elongation of all the proper coats, in form of a gullet, turned much in the ſame manner with the inner orifice of the roſtrum of the head of an alembic. This elongation is called the neck of the bladder. The other two openings in the true fundus of the bladder are formed by the ureters, which, in their courſe downward, run behind the ſpermatic veſſels, and then behind the lower part of the bladder, approaching near each other. See URETERS.

The diſeaſes of the bladder are the ſtone, inflammations, ulcers, &c. See STONE, &c.

For the other bladders of the body, ſee VESICULA.

BLADE, in botany, that part of the flower, or florid attire of a plant, which ariſes out of the concave of the ſheath, and, at the top, uſually divides into two parts, which are covered with globules of the ſame nature as thoſe of the apices, but not ſo copious.

BLADE, a thin ſlender piece of metal, either forged by the hammer, or run and caſt in moulds, to be afterwards ſharpened to a point, edge, or the like.

BLAIN, among farriers, a diſtemper incident to beaſts, being a certain bladder growing on the root of the tongue, againſt the wind-pipe, which ſwells to ſuch a degree, as to ſtop the breath. To cure it, caſt the beaſt, take forth his tongue, and then ſlitting the bladder, waſh it gently with vinegar and a little ſalt.

* BLANDFORD, a town in Dorſetſhire, it has a market on Saturday, and three fairs, on March 7, July 10, and

November 8, for horſes, ſheep, and cheeſe, and October 10, for pedlar's ware and cattle. It is ſeated on the river Stour, near the Downs. It was burnt down in 1731, but has been ſince rebuilt in a handſome manner; they have likewiſe a new beautiful church; and the market place is enlarged. It is governed by two bailiffs, who are annually choſen out of the aldermen or capital burgeſſes. It is eleven miles ſouth of Shafteſbury, and one hundred and ſeven weſt-by-ſouth of London. Long. 2. 15. W. Lat. 50. 50. N.

BLANCHING, in general, the art of bleaching, or whitening. See BLEACHING.

BLANCHING of copper, ſo as to make it reſemble ſilver. If it be done for ſale, it is felony, by 8 and 9 William III. ch. xxvi.

BLANCHING, in coinage, the operation performed on the planchets or pieces of ſilver, to give them the requiſite luſtre and brightneſs. They alſo blanch pieces of plate, when they would have them continue white, or have only ſome parts of them burniſhed.

BLANCHING, among gardeners, an operation whereby certain ſallads, roots, &c. are rendered whiter than they would otherwiſe be.

BLANCHING alſo denotes the operation of covering iron plates with a thin coat or cruſt of tin.

* BLAKE (ROBERT) one of the braveſt admirals that this nation has ever produced; he was born in Auguſt, 1589, and educated at the univerſity of Oxford, where he took the degree of bachelor of arts. He was early tinctured with republican principles, and therefore, when the war broke out between the king and parliament, he declared for the latter, and was ſoon made captain of dragoons, and not long after lieutenant-colonel. He, in conjunction with ſir Robert Pye, ſeized Taunton, in Somerſetſhire, and afterwards maintained his poſt againſt Goring, who laid ſiege to it with near ten thouſand men, and though a part of the town was taken, he held out the reſt of it, and the caſtle, till relief came. In 1648-9, he was appointed, in conjunction with colonel Deane and colonel Popham, to command the fleet, and ſoon after blocked up prince Maurice and prince Rupert in Kinſale harbour. In 1652, he was conſtituted ſole admiral, when he defeated the Dutch fleet commanded by Van Trump, Ruyter, and De Wit, in three ſeveral engagements, in which the Dutch loſt eleven men of war, thirty merchant-ſhips, and, according to their own accounts, had fifteen thouſand men ſlain. Soon after, Blake and his colleagues, with a grand fleet of an hundred ſail, ſtood over to the Dutch coaſt, and forced their fleet to fly for ſhelter into the Texel, where they were kept for ſome time by Monk and Dean, while Blake ſailed northward. At laſt, however, Trump got out, and drew together a fleet of an hundred and twenty men of war; and on the third of June, the generals Dean and Monk came to an engagement with the enemy off the North Foreland, with indifferent ſucceſs; but the next day Blake coming to their aſſiſtance with eighteen ſhips, gained a complete victory; ſo that if the Dutch had not ſaved themſelves on Calais ſands, their whole fleet had been ſunk or taken. In November, 1654, Cromwell ſent him with a ſtrong fleet into the Mediterranean, with orders to ſupport the honour of the Engliſh flag, and to procure ſatisfaction for any injuries that might have been done to our merchants. In the beginning of December, Blake came into the road of Cadiz, where he was treated with all imaginable reſpect; a Dutch admiral would not hoiſt his flag while he was there; and his name was now grown ſo formidable, that a French ſquadron having ſtopped one of his tenders, which had been ſeparated from Blake in a ſtorm, the admiral, as ſoon as he knew to whom it belonged, ſent for the captain on board, and drank Blake's health before him with great ceremony, under a diſcharge of five guns, and then diſmiſſed him.

When he received information that the Spaniſh plate fleet had put into the bay of Santa Cruz, in the iſland of Teneriffe, he weighed anchor, with twenty-five men of war, on the 13th of April 1657, and on the 20th rode with his ſhips off the bay of Santa Cruz, where he ſaw ſixteen Spaniſh ſhips lying in the form of a half-moon. Near the mouth of the haven ſtood a caſtle, furniſhed with great ordnance, beſides which there were ſeven forts round the bay, with ſix, four, and three guns on each, joined to each by a line of communication manned with muſqueteers. To make all ſafe, Don Diego Diagues, general of the Spaniſh fleet cauſed all the ſmaller ſhips to be moored cloſe along the ſhore, and the ſix large galleons ſtood farther out at anchor, with their broadſides towards the ſea. Blake having prepared for the fight, a ſquadron of ſhips was drawn out to make the firſt onſet, commanded by captain Stayner in the Speaker frigate, who no ſooner received orders, but ſailed into the bay, and fell upon the Spaniſh fleet, without the leaſt regard to the forts, which ſpent their ſhot prodigally upon them. No ſooner were theſe entered into the bay, but Blake following after, placed ſeveral ſhips to pour broadſides into the caſtle and forts, and theſe played their parts ſo well, that, after ſome time, the Spaniards found their forts too hot to be held. In the mean time, Blake ſtruck in with Stayner, and bravely fought the Spaniſh ſhips, out of which the enemy were beaten by two o'clock in the afternoon, when Blake, finding it impoſſible to carry them away, ordered his men to ſet them on fire, which was done ſo effectually, that they were all reduced to aſhes, except two, which ſunk downright, nothing remaining above the water but part of the maſts. The Engliſh having now obtained a complete victory, were reduced to another difficulty by the wind, which blew ſo ſtrong into the bay, that they deſpaired of getting out; but while they were in this dreadful exigence, it ſuddenly veered about to the ſouth-weſt, (a thing not known in many years before) which brought Blake and his fleet ſafe to ſea again, though the Spaniards from the caſtle played their great guns perpetually upon them as they paſſed by. This is allowed to have been one of the moſt remarkable actions that ever happened at ſea. This was, however, the laſt action of his life, for he died upon his return in Plymouth Sound, on the 17th of Auguſt, 1657, aged fifty-nine, and was interred in Weſtminſter-abbey; but four years after, this brave and excellent commander was taken up, and ignominiouſly buried in a pit, in St. Margaret's church-yard.

BLANK, or BLANC, white. See WHITE.

BLANK, in commerce, a void place which merchants ſometimes leave in their day-books or journals. It is alſo a piece of paper, at the bottom of which a perſon has ſigned his name, the reſt being void. Theſe are commonly intruſted into the hands of arbiters, to be filled up as they ſhall think proper, to terminate any diſpute or law-ſuit.

BLANK-VERSE, in modern poetry, that compoſed of a certain number of ſyllables, without the aſſiſtance of rhyme. See VERSE and RHYME.

BLANKET, a coverlet for a bed: a ſtuff commonly made of white wool, and wrought in a loom like cloth; with this difference, that they are croſſed like ſerges. There are alſo blankets made with the hair of ſeveral animals, as that of goats, dogs, and others. The manufacture of blankets is chiefly confined to Witney in Oxfordſhire, where there are ſaid to be at leaſt ſixty blanketers, who, amongſt them, have, at leaſt, one hundred and fifty looms, and employ three thouſand perſons, from children of eight years old, who work out about a hundred packs of wool per week.

BLASPHEMY, an indignity offered to the Almighty, by denying what is of right belonging to him; or by attributing to the creature that which is due only to the Creator. The primitive church diſtinguiſhed blaſphemy into three ſorts. 1. The blaſpheming of apoſtates, whom the heathen perſecutors obliged not only to deny, but to curſe Chriſt. Theſe blaſphemers were puniſhed with the higheſt degree of eccleſiaſtical cenſure. 2. The blaſphemy of heretics, and other profane Chriſtians. In this ſenſe, they included not only thoſe who maintained impious doctrines, but thoſe who uttered profane and blaſphemous words, derogatory to the majeſty and honour of God. The ſame puniſhment that was inflicted upon heretics and ſacrilegious perſons, was conſequently the fate of this ſort of blaſphemers. 3. The blaſphemy againſt the Holy Ghoſt, concerning which the opinions of the ancients varied. Some apply it to the ſin of lapſing into idolatry and apoſtacy, and denying Chriſt in time of perſecution. Others made it conſiſt in denying Chriſt to be God: others, in denying the divinity of the Holy Ghoſt: and others place it in a perverſe and malicious aſcribing the operations of the Holy Spirit to the power of the devil; and that againſt expreſs knowledge and conviction of conſcience. Blaſphemy, among the Jews, was puniſhed by ſtoning the offender to death. With us it is puniſhable at common law, by fine and pillory. And by a ſtatute of William III. if any perſon ſhall, by writing or ſpeaking, deny any of the perſons in the trinity, he ſhall be incapable of any office: and for the ſecond offence, be diſabled to ſue in any actions, or to be an executor, &c.

BLAST, in a general ſenſe, any violent exploſion of air, whether occaſioned by gun powder, or by the action of a pair of bellows.

BLAST, or BLIGHT. See BLIGHT.

BLASTING, a term uſed by miners for the tearing up rocks, which lie in their way, by the force of gunpowder. In order to do this, a deep hole is made in the rock, which being charged with gunpowder

powder, they fill it up; leaving only a touch-hole, with a match to fire the charge.

BLAZE, a white ſpot in a horſe's face.

BLAZING-STAR. See COMET.

BLAZONING, or BLAZONRY, in heraldry, the art of decyphering the arms of noble families. The word originally ſignifies the blowing or winding of a horn, and was introduced into heraldry as a term denoting the deſcription of things borne in arms, with their proper ſignifications and intendments, from an ancient cuſtom the heralds, who were judges, had of winding an horn at jeſts and tournaments, when they explained and recorded the atchievements of knights. In blazoning a coat of arms, you muſt always begin with the field, and next proceed to the charge; and if there be many things borne in the field, you muſt firſt name that which is immediately lying upon the field. All perſons beneath the degree of a noble, muſt have their coats blazoned by colours and metals; noblemen by precious ſtones, and kings and princes by planets.

BLEA, in the anatomy of plants, the inner rind or bark. It may be conſidered as an aſſemblage of ſtraight fibres ranged vertically and parallel to one another.

BLEACHING, the art of whitening linens, ſtuffs, ſilks, hair, wax, &c.

The proper materials for bleaching either linen yarn, or cloth, are wood-aſhes brought from Muſcovy and Germany, and Caſſoup, alſo a ſort of aſhes imported from Dantzick: But the common wood-aſhes and weed-aſhes made in this kingdom, are as good as the beſt, unleſs it be for bleaching cloth of a very high price. He that would bleach well, muſt be provided with a convenient bleaching-yard, bleaching-houſe, and all things ſuitable; for ſhifts in trade fail in the event. He ought to have his bleaching-yard well watered. The nature of the water ought to be ſoft, ſuch as will break ſoap. The yard ought to be ſo ſituated, as that in the drought of ſummer the trenches and pipes may be conſtantly ſupplied. As for the bleaching-houſe, it ought to be furniſhed with good coppers and boilers, good tubs for bucking, and alſo ſtands and vats, for keeping the ſeveral ſorts and degrees of lyes, and other great ſtands and vats for keeping the milk, or acidulated liquor.

In the bleaching of your yarn, you muſt firſt open each hank, and lay it on your bucking tub; then cover your yarn with cold water, and let it ſteep for about nine hours: therefore let go that water by means of a cock, which ought to be fixed near the bottom of your tub; and then fill it again with water. Continue thus to ſteep and cleanſe your yarn from its filth, till ſuch time as you perceive that the water is no way foul that comes from it: then withdraw your yarn out of your tub, and rinſe it well in clean water. After rinſing it, you muſt wring out all the water, by wringing three or four hanks at a time: then lay it out to dry in your bleaching-yard; but be ſure never to beat or beetle it. By the time your yarn is perfectly dry, you are to be provided with lye proper for bucking. The firſt bucking you give your yarn, ought to be with the ſtrongeſt lye. Your yarn being quite dry, you muſt dip three or four hanks at a time, and lay them in your bucking tub, in the moſt equal and even manner that poſſibly you can; never preſſing them too much, to the end the lye may the better pierce and penetrate them. All your yarn being thus laid in your tub, put the remainder of your lye, in which you dip your yarn, into a pot or pan, and make a ſlow fire under it, taking care not to heat your lye ſo for the firſt five hours, whilſt you are thus bucking, but that you may be able to endure your hand in it. Your fire made, you muſt very often take out ſome of your lye, and pour it upon your yarn in your tub; then you muſt increaſe your fire gradually and ſlowly, ſo as in four hours time more to bring your lye to boil: during all which time, you muſt continue to take your lye out of your copper, and put it into your tub by ſmall qantities at a time. When your lye begins to boil, you muſt let it boil on for three hours, during the whole time lading or pouring your lye out of your copper into your tub; ſo that you will be twelve hours bucking your yarn. If your lye was ſtrong and good, your yarn will be brought to a yellow colour, if the improper preparing of ſome flax does not hinder it; but where you find your yarn, or part of it, does not attain to this yellow colour, you muſt repeat bucking until it anſwers your ends. When your yarn is ſufficiently bucked for your purpoſe, you muſt take it out, rinſe it in cold water, and wring it well; taking care to wring but three or four hanks at a time, that it may the better endure the labour. Be ſure never to beat or beetle it, as hath been already obſerved. Then ſpread it out in your bleaching-yard; where it muſt lie expoſed to the weather for three or four days before you turn it. When that time is over, turn it, and let it lie there till the ſide that is undermoſt be as good a colour as the other. You muſt water yarn on the bleaching-yard as you do cloth, that it may whiten the ſooner, and lie the ſhorter time upon the green. This bleaching, which was juſt now preſcribed to be given to your yarn, is not intended to make it very white, but chiefly to cleanſe it from the filth that is incident to it, that your cloth may be the thicker and ſtronger, and with more eaſe brought to a colour when it comes to be bleached. Wherefore bleach your yarn for all kinds of cloth, except cambrics and lawns, the yarn whereof ſhould not be bleached before it be woven.

BLEACHING *in Linen Cloth.* In order to perform this operation, you muſt begin with it as you did with your yarn, by ſteeping it in cold water in your tub for nine hours; then change the water on it, till ſuch time as you can perceive that the water is no longer diſcoloured; rinſe, wring, and lay it out to bleach, obſerving conſtantly to water it ſo as never to ſuffer it to be too dry. When it hath lain three or four days thus on the graſs, and is dry, you muſt take hold of each piece, one after another, by the ſelvedge, and draw the cloth to you, ſtill holding it in the moſt even manner that you can, until you come to the farther end, with the corners of which you tie your cloth very looſely in the middle of the folds, and ſo lay it in your bucking-tub, with the two ſelvedges upwards. This you muſt do until you have placed as much cloth in your tub as will cover the bottom of it, taking care not to pack the cloth ſo cloſe but that your lye may penetrate to all parts equally; and at the ſame time you muſt obſerve, never, if poſſible, to buck your cloth but when it is very dry. When you have laid the firſt range of cloth in your tub, you muſt pour as much milk-warm lye on it as will ſufficiently ſoak through all parts of your cloth. Then you muſt lay another range in the ſame manner as you did the firſt; pour on more lye until that be ſoaked as the other was; and continue to do ſo till your tub be full. That done, you muſt begin to buck, for twelve hours together, obſerving the directions, in relation to the fire, given for the former article. Your two firſt buckings ought to be of very ſtrong lye; but afterwards you ſhould abate of that ſtrength in proportion as your cloth grows nearer to its perfection of whiteneſs, leſt you make it rotten and unſerviceable by over-ſtrong lye. After each bucking you muſt carry it ſtraight to the bleaching-yard, where it ought to lie forty-eight hours. This you muſt perform ſucceſſively as many times as you ſee occaſion, according to the nature of the cloth, from the buck to the bleaching-yard, and from the bleaching-yard to the buck, before you begin to uſe it with milk; ſtill giving it weaker lye after the two firſt buckings, and conſtantly obſerving to water your cloth on the graſs, ſo as never to ſuffer it to be dry during theſe bleachings. It is impoſſible to preſcribe a certain rule, or to direct the preciſe number of buckings that ought to be given to cloth, becauſe that depends on the ſorts or kinds you are to bleach; and therefore the experience and judgment of the bleacher muſt guide him therein. Your thin fine cloths will bleach much ſooner than your coarſe or ſtiff ſtubborn cloths will do: but both ſorts muſt be dry when you put them into the milk; or which will anſwer the ſame purpoſe, a quantity of water rendered acid by oil of vitriol, in the proportion of half an ounce of the latter to a gallon of the former.

The milking of cloth or laying it in an acidulated liquor, was not uſed till of late; but it is found by experience to contribute greatly to bring cloth to a good colour. It has been already obſerved, that you muſt have large tubs or vats for the keeping of your milk. Theſe vats, which ſhould hold a ton or two a-piece, you ought to keep full of butter-milk, or ſour milk, as it is commonly called, ſkimmed milk, whey, and the like, mixed together; there to ſtand and ſour, until you have occaſion to uſe them. It is very rare that your milk proves too ſour; but if at any time it ſhould, abate its ſourneſs by adding cold water. When your cloth is dry, and ready to be milked, have a great tub with milk ſet half way in the ground. Your cloth being well ſoaked therein, you muſt preſs it down with heavy planks or weights, ſo as it may not be raiſed by the fermentation that will be in your milk or acid liquor. When the cloth has lain a-while, take care that theſe weights be ſufficient; and that your planks be neither of new oak or alder, for thoſe woods ſpoil and ſtain cloth very much, as will alſo ſeveral ſorts of ſtones, if laid upon cloth either in the tubs or in the field. Thus your cloth muſt ſleep for at leaſt forty-eight hours; or, if you pleaſe, for three days and three nights; for it will be ſo much the better for the cloth: then ſpread it on the green and water it well, to prevent its drying with the milk or acid in it:

when this is ſufficiently done by watering, you muſt rinſe the cloth, and waſh it well with a lather of ſoap. Your next buſineſs is to buck the cloth again juſt as it comes from the ſoap-ſuds; and when bucked, you muſt, without further rinſing, ſpread it on the graſs in your bleaching-yard: there it muſt remain expoſed to the air for two days and two nights, and be conſtantly watered in the day-time, when you lay it out to bleach. This operation muſt be repeated ſix, ſeven, or eight times ſucceſſively, until you perceive your cloth is come to the colour you deſire to give it; that is, you muſt milk, then bleach, then waſh, then ſoap, and buck by turns, until you attain your end; for it is impoſſible to propoſe a certain rule, becauſe of the great variety of cloth: only this muſt be obſerved, that each time you buck, you muſt ſpend twelve hours, during all which time you ought to be conſtantly lading or pouring the lye into your tub, according to the former directions; for otherwiſe you may chance to burn your cloth, eſpecially when the lye grows hot. This rule is alſo conſtantly to be obſerved, that your cloth be very dry when you lay it in the milk or acid liquor. This laſt time you milk your cloths, you ought, inſtead of the uſual waſhing or rinſing, to lay them in an open ciſtern; where people with clean feet ſhould tread them very well for half an hour at leaſt. That done, waſh them with clean water, until you perceive the fluid to be no way diſcoloured: then having made your bucking-tub very clean, lay your cloths in it juſt as you did at firſt, and ſteep them in warm water for an hour: then let go that water, and ſteep them a ſecond time in water ſomewhat warmer, for an hour longer: let that water go likewiſe, and ſteep your cloths a third time in water yet warmer than the former; but not ſo hot as to boil. This laſt ſteeping need not be near ſo long as the preceding; half an hour is ſufficient. Then take out your cloth, rinſe and wring it well, that it may be cleanſed from the lye, milk, or acid liquor, and ſoap, and made more ſuſceptible of receiving the ſtarch and blue; which is the next operation.

The way to make ſtarch for bleaching is this: Fill the boiler or pan, wherein you deſign to make your ſtarch, about three quarters full of water; when the water boils, pour into it as much ſtarch diſſolved in water, as will completely fill your boiler; keep it ſtirring perpetually, leſt it burn, and let it boil for half an hour, or thereabouts; then take it off the fire, ſtrain it into another veſſel with warm water, in proportion to the cloth you deſign to dreſs, taking great care to keep it ſtirring, breaking and diſſolving the clods of ſtarch, that the whole may be of an equal thickneſs or conſiſtency. When this part of the operation is finiſhed, mix powder blue in water, in ſuch proportion as you would give your cloth a higher or a lower colour, and add it to your ſtarch prepared as above. By this means you may make your ſtarch thicker or thinner, as you think will be beſt adapted to your cloth. Take great care never to uſe indigo, or ſtone blue; becauſe it gives a dull dark colour.

When you have thus prepared your water for ſtarching and bluing, put your cloth into it; and when it is well ſoaked, take it out, wring it very hard, and ſpread it on the graſs in your bleaching-yard to dry. You will generally find that the blue will ſettle in ſome parts of your cloth more than in others: in which caſe you muſt, with a clean cloth wet in water, rub ſuch parts till you bring them down to the colour they ought to have. Your cloths being now well ſtarched and blued, according to the circumſtances or nature thereof, and being very dry, either fold them up yourſelf, or ſend them to a lapper.

It is neceſſary to add a word or two in reference to the preparing of lye for bucking your cloth. It has been already mentioned, that the beſt aſhes yet known in the world, are wood-aſhes and caſſoup. But it is impoſſible to preſcribe ſuch a rule as would render a perſon entirely ignorant of the bleaching trade perfect; for it is in this, as in every other mechanical trade, requiſite, that the perſon employed ſhould have experience and judgment enough to know the goodneſs or imperfection of the materials to be employed: but thoſe who have occaſion to make uſe of wood-aſhes and caſſoup, will find that the following directions will be of great ſervice. Caſſoup and wood-aſhes are very hard; therefore you muſt reduce them ſeverally into powder; then to each hogſhead of boiling water, put 50 or 60 pound weight of caſſoup, if you deſign to make a caſſoup-lye; or the like weight of wood-aſhes, if you intend to make your lye of that material: and ſo in proportion as to the quantity you would make. Having boiled your aſhes in the water about half an hour, take the fire from under the copper, that the lye may ſettle; which it will not do whilſt there is any heat under it. The liquor being clear, lade it gently from off the aſhes, and put it into a vat: where you muſt keep it apart from the reſt, till you have occaſion to uſe it: then put the ſame quantity of water into your copper as at firſt; and when it is ſettled, lade it off as before into another large vat, which ought to be twice or thrice bigger than your former, becauſe you muſt mix the ſecond and third lyes together. The third is made in the ſame manner as the two former. The two latter lyes are ſtrengthened, by adding as much of the firſt as you judge neceſſary; but be ſure to obſerve this rule; let your lye be rather ſomewhat too weak than too ſtrong, becauſe the former may be ſupplied by rebucking your cloth, but if the latter ſhould happen, it will burn and deſtroy the whole. You will not extract the whole ſtrength of your aſhes by theſe lyes, and therefore muſt afterwards take them out of your boiler, and lay them into a kind of maſh-tub, with the bottom fenced with ſtraw in order to prevent the aſhes clodding about the hole: then pour either hot or cold water upon them, and let the whole be well mixed or maſhed together: and after twenty-four hours ſoaking, draw it off as you do wort. This you ſhould repeat as long as you find any ſtrength in the aſhes, and keep theſe ſeveral lyes together, wherewith you may abate the force of your ſtrongeſt lyes, in proportion as you find your cloth grow nearer the colour deſired. You will find theſe wood-aſhes and caſſoups, after you have extracted all the lye you can, very uſeful for manuring old grounds.

There is a great difference between caſſoup and wood-aſhes. The firſt, being of a hard, harſh quality, is more proper for your firſt buckings, before you put your cloth to the milk or acidulated water: it ſearches and pierces the cloth with more force than the other: but after milking, the wood-aſhes are moſt proper; for by their ſoft oily quality they nouriſh the cloth, and at the ſame time cleanſe it from its filth. The caſſoup, if uſed after the milking or acidulating of your cloth, may make it too thin; each therefore ſhould be uſed in their proper ſeaſon; for nothing will ſo effectually bring goods into reputation, and advance trade, as an honeſt conſcientious diſcharge of duty in a dealer.

In caſe caſſoup cannot be had, you may make uſe of wood-aſhes or pot-aſhes inſtead of it. The aſhes of any wood or plant, particularly ferns and whins, or furze, are good for bleaching cloth.

BLEACHING *of Hair*, is done by ſpreading the hair to be bleached upon the graſs, in the ſame manner as linen, after it has been firſt waſhed out in a lixivious water.

This lye, with the force of the ſun and air, brings the hair to ſo perfect a whiteneſs, that the moſt experienced perſon may be deceived therein; there being ſcarce any way of detecting the artifice, but by boiling and drying it; which leaves the hair of the colour of a dead walnut-tree leaf.

BLEACHING *of Silk*. The ſilk, being yet raw, is put into a linen bag and thrown into a veſſel of boiling river water, in which ſoap has been diſſolved, and thus boiled for two or three hours; the bag being turned ſeveral times, taken out and beaten, then waſhed out in cold water, and wrung out ſlightly, and thrown into a veſſel of cold water, mixed with ſoap, and a little indigo. The indigo gives it the bluiſh caſt that is obſervable in white ſilks. When it has been taken out of the ſecond veſſel, it is wrung out, and all the water and ſoap ſqueezed out, ſhook out to untwiſt, and ſeparate the threads, and hung up in the air in a kind of ſtove, made on purpoſe, in which ſulphur is burnt, the vapour of which gives the laſt degree of whiteneſs to the ſilk.

BLEACHING *of Woollen Stuff*. There are three methods of whitening woollen-ſtuffs; the firſt is with water and ſoap, the ſecond is with vapour of ſulphur, the third with chalk, indigo, and vapour of ſulphur. For the firſt, when the ſtuffs are come from the fulling-mill, they are to be put into ſoaped water pretty hot, and worked afreſh by force of arms over a bench, which finiſhes the whitening which the fulling-mill had begun; in the laſt place they are to be waſhed out in fair water and dried; this is called the natural way of bleaching. The ſecond method is called bleaching by the flower; the ſtuff is firſt waſhed in river water, and then put to dry on poles, and when it is half dry, ſpread it out in a kind of ſtove, wherein ſulphur is burnt, the vapour of which diffuſing itſelf, ſticks by little and little over all the ſtuffs, and gives it a fine whitening. The third method is thus; after the ſtuffs have been waſhed, they are to be thrown into cold water, impregnated with chalk and indigo, in which they are well agitated. they are waſhed afreſh in elder water, then half dried on poles, and then ſpread in a ſtove to receive the vapour of the ſulphur, which finiſhes the bleaching.

This is to be remembered, that when a ſtuff has once received the ſteam of ſulphur, it will ſcarce receive any beautiful dye, except black and blue.

BLEACHING *of Wax*, the operation of changing the colour of the yellow into a beautiful white: it is done in the following manner. The common yellow wax is firſt reduced into ſmall grains, by melting it, and throwing it while hot into cold water, or ſpreading it into very thin cakes. The wax thus granulated or flatted, is placed in the open air on linen cloths, where it remains night and day, it being neceſſary that it be expoſed both to the rays of the ſun, and the influence of the dew. After thus lying a conſiderable time, it is again melted and granulated, or flattened into cakes, and once more expoſed to the action of the ſun and dew. Theſe operations are alternately performed till the wax has acquired the requiſite degree of whiteneſs. When the ſun and dew have perfectly bleached the wax, it is melted for the laſt time, taken out of the copper with a ladle, and poured, by means of a double funnel, into ſhallow moulds or round cavities formed in a board, the moulds being previouſly wetted with cold water, that the wax may not ſtick to them; and in this manner the cakes of white wax we ſee in the ſhops are made. Theſe cakes are then taken out of the moulds, and again expoſed to the action of the air, dew, and ſun, for two days and two nights, in order to dry them thoroughly, and render them more tranſparent.

* BLECHINGLY, a town in Surry, returns two members to Parliament; it has no market, but has two fairs, on June 22, and November 2, for horſes, bullocks, and toys. The bailiff, who returns the members, is choſen annually at the lord of the manor's court. It ſtands on a hill, and has a fine proſpect as far as the South Downs, in Suſſex. It is twenty miles eaſt of Guildford, and twenty-one ſouth-by-weſt of London. Long. 17. 15. Lat. 51. 20.

BLEEDING, or BLOOD-LETTING, the operation of taking blood from any part of the body, either by the lancet, leeches, or cupping. See PHLEBOTOMY, CUPPING, &c.

Bleeding is highly neceſſary in the phrenitis, ophthalmia, quinſy, rheumatiſm, cough, hectic fits, and, in general, in all inflammatory caſes. *Pringle's Obſervations on the Diſeaſes of the Army.*

It is to be obſerved, however, that, in malignant and putrid diſorders, bleeding frequently renders them more malignant, and therefore to be omitted, or at leaſt not repeated; unleſs there appear evident marks of inflammations.

* BLEEDING *at the Noſe*, an hæmorrhage from that organ of the body, owing to the more plentiful appulſe of blood to the noſtrils by a ſtronger motion of the heart, whereby the ſmall arteries in the pituitary coat become turgid, and too much diſtended, till at length they gape, and the blood ruſhes out. A bleeding of the noſe may be promoted when perſons of ſedentary lives, that indulge their appetites, and ſo become plethoric, put their blood into extraordinary agitation by violent paſſions and exerciſes, by ſpirituous liquors, ſpices, heating, volatile medicines, hot baths, or ſuddenly chilling their feet. Likewiſe the ſudden change of air from hot to cold, and cold to hot, by fits, eſpecially at the equinoxes, may cauſe this bleeding; as alſo when from cold and moiſt, the air becomes highly elaſtic, and *vice verſa*. Thoſe moreover are liable to it who are afflicted with rheumatic, nephritic, arthritic, and iſchiadic pains, or who have fevers or ſpaſms. It ſometimes happens before the eruptions of the ſmall-pox and meaſles, and to thoſe who have loſt a large limb; or who labour under obſtructions of the liver and ſpleen; hence, in an inveterate ſcurvy, dropſy, and cahexy, there often happens a fatal hæmorrhage. It differs much as to the quantity; ſome loſe only a few drops, ſome ſeveral ounces, and ſome five or ſix pounds. No hæmorrhage is more apt to return, which it does to ſome in a few days, to others in a few hours. To the plethoric it is generally ſalutary; and there are many inſtances of a vertigo, a ſcotomia, dull, heavy pains of the head, phrenzy, and even an epilepſy, being carried off by a bleeding at the noſe. On the contrary, from its ſuppreſſion, there have ariſen vertigoes, apoplexies, epilepſies, convulſions, noiſe in the ears, and hardneſs of hearing, and even a gutta ſerena. Theſe hæmorrhages are critical and ſalutary in a ſynechus on a ſemicritical day; that is, between the third and fourth, or on a critical day, viz. the ſeventh; for as theſe fevers are generally cauſed by a plethora, they are carried off that way. But enormous and long continued bleedings at the noſe, when they ariſe from ſpaſms of the internal parts, and are preceded with coldneſs of the extreme parts, and fainting fits, generally terminate in death. In ſpotted

and malignant fevers, attended with great loſs of ſtrength, it is exceeding dangerous. In chronical diſeaſes, wherein the viſcera are decayed, it is fatal, which often happens to the cachectic and hydropic.

It muſt be noted, that when the patient is plethoric, the bleeding muſt not be ſtopped haſtily, if at all; nor when the menſes in women have been ſuppreſſed, or the lochia, or the bleeding piles in men accuſtomed thereto, much leſs muſt a ſtoppage be attempted when the bleeding itſelf is periodical.

BLEND-METAL *Iron*, a coarſe ſort of iron from the Staffordſhire mines, uſed for making nails and heavy ware; in ſome places alſo for horſe-ſhoes.

* BLENHEIM, Battle of, the ſecond of Auguſt, 1704. The allies advanced within a league of Augſburgh, and though they found the elector of Bavaria too ſecurely poſted under the cannon of that city, to be diſlodged, or attacked with any proſpect of ſucceſs, they encamped, with Friedburg in their centre, ſo as to cut off all communication between him and his dominions. The duke of Marlborough having reduced him to this ſituation, propoſed very advantageous terms of peace, provided he would abandon the French intereſt, and join the Imperialiſts in Italy. His ſubjects ſeeing themſelves at the mercy of the allies, preſſed him to comply with theſe offers, rather than expoſe his country to ruin and deſolation. A negotiation was begun, and he ſeemed ready to join the articles, when hearing that marechal Tallard had paſſed the Black-foreſt to join him with a great body of forces, he declared, that ſince the king of France had made ſuch powerful efforts to ſupport him, he thought himſelf obliged in honour to continue firm in his alliance. The generals of the allies were ſo exaſperated at this diſappointment, that they ſent out detachments to ravage the country of Bavaria, as far as Munich; and upwards of three hundred towns, villages, and caſtles, were inhumanly deſtroyed, to the indelible diſgrace of thoſe who countenanced and conducted ſuch barbarous practices. The elector, ſhocked at theſe brutal proceedings, deſired, in a letter to the duke of Marlborough, that a ſtop might be put to ſuch acts of violence ſo oppoſite to true glory. The anſwer he received, implied, that it was in his own power to put an end to them, by a ſpeedy accommodation. Incenſed at this reply, he declared, that ſince they had obliged him to draw the ſword, he would throw away the ſcabbard. The duke and prince Lewis finding it impracticable to attack the elector in his ſtrong camp, reſolved to undertake the ſiege of Ingolſtadt; and for that purpoſe paſſed the Paer, near the town of Schrobbenhauſen, where they encamped with their left at Cloſterberg. On the 5th day of Auguſt, the elector of Bavaria marched to Biberack, where he was joined by Tallard. He reſolved to paſs the Danube at Lawingen, to attack prince Eugene, who had followed the French army from the lines of Biehl, and lay encamped at Hochſtadt. Next day, however, he made a motion that diſappointed the enemy. Nevertheleſs, they perſiſted in their deſign of paſſing the Danube, and encamping at Blenheim. The allies reſolved, that prince Lewis ſhould undertake the ſiege of Ingolſtadt, whilſt prince Eugene and the duke ſhould obſerve the elector of Bavaria. Advice being received that he had actually croſſed the Danube at Lawingen, the duke of Marlborough joined the forces of prince Eugene, at the camp of Munſter, on the eleventh day of Auguſt, prince Lewis having by this time marched off towards the place he intended to beſiege. Next day the duke of Marlborough and prince Eugene obſerved the poſture of the enemy, who were advantageouſly poſted on a hill near Hochſtadt, their right being covered by the Danube, and the village of Blenheim, their left by the village of Lutzengen, and their front by a rivulet, the banks of which were ſteep, and the bottom marſhy. Notwithſtanding theſe difficulties, the generals reſolved to attack them immediately rather than lie inactive, until their forage and proviſion ſhould be conſumed. They were moreover ſtimulated to this hazardous enterprize, by an intercepted letter to the elector of Bavaria, from marechal Villeroy, giving him to underſtand, that he had received orders to ravage the country of Wirtemberg, and intercept all communication between the Rhine and the allied army. The diſpoſitions being made for the attack, and the orders communicated to the general officers, the forces advanced into the plain on the thirteenth day of Auguſt, and were ranged in order of battle. The cannonading began about nine in the morning, and continued on both ſides till one in the afternoon. The French and Bavarians amounted to about ſixty thouſand men. Marechal Tallard commanded on the right, and poſted ſeven and twenty battalions with twelve ſquadrons in the village of Blenheim, ſuppoſing that there the allies would make their chief

effort: their left was conducted by the elector of Bavaria, aſſiſted by Marſin, a French general of experience and capacity. The number of the confederates did not exceed five and fifty thouſand: their right was under the direction of prince Eugene, and their left commanded by the duke of Marlborough. At noon the action was begun by a body of Engliſh and Heſſians, under major-general Wilkes, who having paſſed the rivulet with difficulty, and filed off to the left in the face of the enemy, attacked the village of Blenheim with great vigour, but were repulſed after three ſucceſſive attempts. Meanwhile, the troops in the centre, and part of the right wing, paſſed the rivulet on planks in different places, and formed on the other ſide without any moleſtation from the enemy. At length, however, they were charged by French horſe, with ſuch impetuoſity, and ſo terribly galled in flank by the troops poſted at Blenheim, that they fell in diſorder, and part of them repaſſed the rivulet; but a reinforcement of dragoons coming up, the French cavalry were broke in their turn, and driven to the very hedges of the village of Blenheim. The left wing of the confederates being now completely formed, aſcended the hill in a firm compacted body, charging the enemy's horſe, which could no longer ſtand their ground, but rallied ſeveral times as they gave way. Tallard, in order to make a vigorous effort, ordered ten battalions to fill up the intervals of his cavalry. The duke perceiving his deſign, ſent three battalions of the troops of Zell to ſuſtain his horſe. Nevertheleſs, the line was a little diſordered by the prodigious fire from the French infantry, and even obliged to recoil about ſixty paces; but the confederates advancing to the charge with redoubled ardour, routed the French horſe, and their battalions being thus abandoned, were cut in pieces. Tallard having rallied his broken cavalry behind ſome tents that were ſtill ſtanding, reſolved to draw off the troops he had poſted in the village of Blenheim, and ſent an aid-de-camp to Marſin, who was with the elector of Bavaria on the left, to deſire he would face the confederates with ſome troops to the right of the village of Oberklau, ſo as to keep them in play, and favour the retreat of the forces from Blenheim. That officer aſſured him, he was ſo far from being in a condition to ſpare troops, that he could hardly maintain his ground. The fate of the day was now more than half decided. The French cavalry being vigorouſly attacked in flank were totally defeated. Part of them endeavoured to gain the bridge which they had thrown over the Danube between Hochſtadt and Blenheim; but they were ſo cloſely purſued, that thoſe who eſcaped the ſlaughter threw themſelves into the river, where they periſhed. Tallard being ſurrounded, was taken near a mill behind the village Sonderen, together with the Marquis de Montperoux, general of horſe, the major-generals De Seppeville, De Silly, De la Valiere, and many other officers of diſtinction. Whilſt theſe occurrences paſſed on the left wing, Marſin's quarters at the village of Oberklau, in the centre, were attacked by ten battalions, under the prince of Holſtein-beck, who paſſed the rivulet with undaunted reſolution; but before he could form his men on the other ſide, he was overpowered by numbers, mortally wounded, and taken priſoner. His battalions being ſupported by ſome Daniſh and Hanoverian cavalry, renewed the charge, and were again repulſed; at length, the duke of Marlborough in perſon brought up ſome freſh ſquadrons from the body of reſerve, and obliged the enemy to retire. By this time, prince Eugene had obliged the left wing of the enemy to give ground, after having ſurmounted a great number of difficulties, ſuſtained a very obſtinate oppoſition, and ſeen his cavalry, in which his chief ſtrength ſeemed to lie, three times repulſed. The duke of Marlborough had no ſooner defeated the right wing, than he made a diſpoſition to reinforce the prince, when he underſtood from an aid-de-camp, that his highneſs had no occaſion for aſſiſtance, and that the elector, and Monſieur de Marſin, had abandoned Oberklau and Lutzingen. They were purſued as far as the villages of Morſelingen and Teiſſenhoven, from whence they retreated to Dillingen and Lawingen. The confederates were now maſters of the field of battle, and ſurrounded the village of Blenheim, in which, as we have already obſerved, ſeven and twenty battalions and twelve ſquadrons were poſted. Seeing themſelves cut off from all communication with the reſt of their army, and deſpairing of being able to force their way through the allies, they capitulated about eight in the evening, laid down their arms, delivered their colours and ſtandard, and ſurrendered themſelves priſoners of war, on condition, that the officers ſhould not be rifled. This was one of the moſt glorious and complete victories that ever was obtained. Ten thouſand French and Bavarians were left dead on the field of battle; the greater part of thirty ſquadrons of horſe and dragoons periſhed in the river Danube; thirteen thouſand were made priſoners; one hundred pieces of cannon were taken, with twenty-four mortars, one hundred and twenty-nine colours, one hundred and ſeventy-one ſtandards, ſeventeen pair of kettle-drums, three thouſand ſix hundred tents, four and thirty coaches, three hundred laden mules, two bridges of boats, fifteen pontoons, fifteen barrels and eight caſks filled with ſilver. Of the allies, about four thouſand five hundred men were killed, and about eight thouſand wounded or taken. The loſs of the battle was imputed to two capital errors committed by marechal Tallard; namely, his weakening the centre, by detaching ſuch a number of troops to the village of Blenheim, and his ſuffering the confederates to paſs the rivulet, and form unmoleſted. Certain it is, theſe circumſtances contributed to the ſucceſs of the duke of Marlborough, who rode through the hotteſt of the fire with the calmeſt intrepidity, giving his orders with that preſence of mind and deliberation which were ſo peculiar to his character. When he next day viſited Tallard, he told that general, he was ſorry ſuch a misfortune ſhould happen perſonally on one for whom he had a profound eſteem. The marechal congratulated him on having vanquiſhed the beſt troops in the world; a compliment to which the duke replied, that he thought his own the beſt troops in the world, ſeeing they had conquered thoſe upon whom the marechal had beſtowed ſuch an encomium.

BLEYME, in farriery, an inflammation in a horſe's hoof, occaſioned by blood putrified in the inner part of the coffin towards the heel, between the ſole and the coffin-bone.

BLIGHT. There is nothing in the buſineſs of gardening which requires more of our ſerious attention than the endeavouring to prevent or guard againſt this great enemy of gardens.

In order, therefore, to remedy this evil, it will be neceſſary firſt to underſtand the true cauſes of blights, and, although many curious perſons have attempted to explain the cauſes of them, yet very few of them have yet come near the truth, except the reverend and learned Dr. Hales, who hath, in his curious book, intitled Vegetable Staticks, given us ſome accurate experiments upon the growth and perſpiration of plants; together with the various effects the air has upon vegetables; that by carefully attending thereto, together with diligent obſervations, we need ſeldom to be at a loſs how to account for the cauſes of blights whenever they may happen.

Theſe are often cauſed by a continued eaſterly wind, for ſeveral days together, without the intervention of ſhowers, or any morning dew, by which the perſpiration of the tender bloſſoms is ſtopped; ſo that, in a ſhort time, their colour is changed, and they wither and decay: and if it ſo happens, that there is a long continuance of the ſame weather, it equally affects the tender leaves; for their perſpiring matter is hereby thickened, and rendered glutinous, cloſely adhering to the ſurfaces of the leaves, and becomes a proper nutriment to thoſe ſmall * inſects, which are always found preying upon the leaves and tender branches of fruit-trees, whenever this blight happens.

The beſt remedy for this diſtemper that I have yet known to ſucceed, is, gently to waſh and ſprinkle over the trees, from time to time, with common water; that is, ſuch as hath not had any thing ſteeped in it, and the ſooner this is performed, whenever we apprehend danger, the better; and, if the young and tender ſhoots ſeem to be much infected, waſh them with a woollen cloth, ſo as to clear them, if poſſible, from all this glutinous matter, that their reſpiration may not be obſtructed; and if we place ſome broad flat pans or tubs of water near the trees, that the vapours exhaled from it may be received by the trees, it will keep their tender parts in a ductile ſtate, and greatly help them; but whenever this operation of waſhing the trees is performed, it ſhould be early in the day, that the moiſture may be exhaled before the cold of the night comes on; eſpecially if the nights are froſty: nor ſhould it be done when the ſun ſhines very hot upon the wall, which would be ſubject to ſcorch up the tender bloſſoms. Mr. Whittingham, a celebrated nurſery-man of Coventry, ſays, the ſmoak of tobacco, conveyed pretty briſkly on trees in this ſtate, will totally exterpate ſuch deſtructive inſects, and preſerve the fruits.

Another cauſe of blights in the ſpring is, ſharp hoary froſts, which are often ſucceeded by hot ſun-ſhine in the day time; which is the moſt ſudden and certain deſtroyer of fruits that is known: for the cold of the night ſtarves the tender parts of the bloſſoms, and the ſun riſing hot upon the walls before the moiſture is dried from the bloſſoms, which being in ſmall globules, collect the rays of the ſun, a ſcalding heat is therefore acquired, which ſcorches the tender flowers, and other parts of the plants.

But there is another ſort of blight, againſt which it is very difficult to guard our fruit-trees; this is ſharp pinching froſty mornings, which often happens at the time when the trees are in flower, or while the fruit is very young, and occaſion the bloſſoms or fruit to drop off: and ſometimes the tender parts of the ſhoots and leaves are greatly injured thereby.

The only method yet found out to prevent this miſchief, is by carefully covering the walls, either with mats, canvas, reeds, &c. which being faſtened ſo as not to be diſturbed with the wind, and ſuffered to remain on during the night, by taking them off every day, if the weather permits, is the beſt and ſureſt method that hath yet been uſed in this caſe. Care muſt be taken, that the trees remain not too long covered: and though the expence of it may to ſome ſeem very great, yet, if theſe coverings are fixed near the upper part of the wall, and are faſtened to pullies, ſo as to be drawn up, or let down, it will be ſoon and eaſily done; and the ſucceſs will ſufficiently pay the trouble.

But there is another ſort of blight that ſometimes comes later in the ſpring, viz. in April or May, which is very often deſtructive to orchards, and open plantations, and againſt which we know no remedy. This is what is called a fire-blaſt, which, in a few hours, hath not only deſtroyed the fruit and leaves, but many times parts of trees, and ſometimes whole ones have been killed by it.

This is ſuppoſed to be effected by volumes of tranſparent flying vapours, which, among the many forms they revolve into, may ſometimes approach ſo near to an hemiſphere, or hemicylinder, either in their upper or lower ſurfaces, as thereby to make the beams of the ſun converge enough to ſcorch the plants or trees they fall upon, in proportion to the greater or leſs convergency of the ſun's rays.

Blaſts alſo may be occaſioned by the reflections of the clouds, as well as by the abovementioned refraction of denſe tranſparent vapours.

Againſt this enemy to fruits, &c. as hath been already ſaid, there is no abſolute ſecurity; but if we allow a greater diſtance between the trees, and make choice of clear healthy ſituations, that the air may freely paſs between the trees, to diſſipate the vapours before they are formed into volumes, whereby the circumambient air will be more clear and leſs ſubject to injuries; as alſo the fruits which are produced in this clearer air, will be much better taſted than thoſe which are ſurrounded with a thick rancid air; for as fruits are often in a reſpiring ſtate, ſo they conſequently, by imbibing a part of theſe vapours, are rendered crude and ill-taſted: which is often the caſe with a great part of our fruits in England. *Miller's Gard. Dict.*

BLIND, deprived of ſight. See BLINDNESS.

BLIND is alſo uſed in ſpeaking of veſſels which are not perforated. Thus the chymiſts ſay, a blind alembic; that is, one which has no aperture. A tube is ſaid to be a blind one, when it is cloſed at top.

Pore-BLIND, or *Pur*-BLIND, is ſaid of a perſon who is very ſhort ſighted.

Moon-BLIND, denotes horſes that loſe their ſight at certain times of the moon; to cure which take half an ounce of lapis calaminaris; heat it red-hot and quench it in a quarter of a pint of plantain-water, or white-wine: to this add half a dram of aloes, and a ſpoonful of camphor in powder; and letting them diſſolve, drop part of it into the horſe's eye.

BLIND, among traders, a kind of falſe light in their warehouſes and ſhops, to prevent too great light from diminiſhing the luſtre of their linens and ſtuffs.

BLIND, or BLINDS, among mineraliſts, a kind of lead marcaſite; by our miners called mock-ore, mock-lead, and wild-lead.

BLINDS, or BLINDES, in the art of war, a ſort of defence commonly made of oziers, or branches interwoven, and laid acroſs between two rows of ſtakes, about five feet and a half high, and four or five feet aſunder; uſed particularly at the heads of trenches, when they are extended in front towards the glacis, ſerving to ſhelter the workmen, and prevent their being over-looked by the enemy.

BLINDNESS, a total privation of ſight. The cauſes of blindneſs are various, proceeding from cataracts, gutta ſerenas, &c. There are alſo periodical blindneſs, as a defect of ſight in ſome towards night, in others only in the day; the former of which is termed nyctalopia; the latter, hemeralopia. See NYCTALOPIA, &c.

BLINDNESS, in farriery. See EYE.

BLOCKS, in naval affairs, little machines for the ropes to run in, which are ſo ſituated among the rigging as to govern the moſt neceſſary mechaniſm aloft, ſuch as hoiſting, lowering, traverſing, or gathering or brailing up the ſails by hauling on certain ropes on deck.

BLOCKADE, in the art of war, the blocking up a place, by poſting troops at all the avenues leading to it, to keep ſupplies of men and proviſions from getting into it; and by theſe means propoſing to ſtarve it out, without making any regular attacks.

BLOMARY, or BLOOMARY, in metallurgy, the firſt forge through which iron paſſes, after it is melted out of the ore.

BLOOD, *Sanguis* a red liquor circulating through the arteries, veins, and other veſſels of animal bodies; and ſerving for the ſupport of life, and nouriſhment of all their parts.

Blood is the great ſource from whence all the other liquors of the body are derived; for the origin of which, ſee SANGUIFICATION.

Recent blood is equably fluid, and in taſte ſomewhat ſaline. Viewed by a microſcope, it appears compoſed of numerous red globules ſwimming in a tranſparent fluid.

On ſtanding for a little time, it ſeparates into a thick craſſamentum, and fluid ſerum.

The ſerum of blood is more ſaline than the craſſamentum, and does not ſo ſpeedily putrefy. It freezes with ſomewhat more difficulty than pure water, and its aqueous part evaporates, by a gentle warmth, ſomewhat more readily, leaving about one-twelfth the weight of the ſerum of a ſolid yellowiſh pellucid matter. Expoſed to a heat a little greater than that of the human body, it coagulates into a ſolid maſs, without any conſiderable evaporation. Both this coagulum, and the inſpiſſated ſerum, are readily inflammable in the fire, not diſſoluble in water, or in ſpirit of wine, in acid, or in alkaline liquors.

BLOOD, in medicine, claims the moſt attentive regard of phyſicians. An exceſs of its quantity produces a plethora, lethargy, &c. Fevers are the conſequence of its too rapid motion, and obſtructions, of its vicidity and languor.

The too great heat and viſcidity of the blood, are its prevailing diſorder in a country like this, where people live high, and drink hot inflammable liquors. Beſides temperance, and uſing water as beverage, the milder preparations of mercury contribute greatly to cool and dilute the blood: ſuch are æthiops and cinnabar, if given in moderate doſes, ſo as not to affect the ſtomach or excite a ſalivation.

Thickneſs of the blood, is another diſtemperature, proceeding from a plethora, and diminution of its motion; from whence ariſe obſtructions, ſtagnations, hypochondriac and hyſteric affections, &c. The incubus, or night-mare, is alſo owing to the ſame cauſe.

* BLOOD, the circulation of, through the lungs firſt made public by M. Servetus, a French phyſician in 1553. General circulation of the blood fully diſcovered by Dr. Harvey, 1628.

Spitting of BLOOD, is cured by copious bleeding every third day, to the fourth time. Gentle purging is likewiſe recommended; and for appeaſing the commotion of the blood, ſpirit of vitriol, but more eſpecially the tincture of roſes made therewith. A milk diet is alſo preferable to any other; and after the cure is compleated, it will be neceſſary, by way of prevention, to bleed once in ſix months for ſeveral years together.

BLOOD, in farriery, a diſtemper in the backs of cattle, which will make a beaſt go as if he drew his head aſide, or after him. In order to cure it, you ſhould ſlit the length of two joints under his tail, and ſo let him bleed well; but if he bleeds too much, knit his tail next the body, and then bind ſalt and nettles bruiſed into it.

BLOOD-SPAVIN. See SPAVIN.

BLOOD-STONE. See HÆMATITES.

BLOODY-FLUX. See FLUX and DYSENTERY.

BLOSSOM, denotes the flower of plants, more eſpecially of fruit-trees. See BOTANY and FLOWER.

BLOSSOM, or PEACH-COLURED, in the manage, a term applied to a horſe that has his hair white, but intermixed all over with ſorrel and bay hairs. Such horſes are ſo inſenſible, and hard both in the mouth and the flanks, that they are ſcarce valued; beſides they are apt to turn blind.

BLOW-PIPE, among jewellers, &c. a glaſs tube, of a length and thickneſs at diſcretion, wherewith they quicken the flame of their lamp, by blowing through it with their mouth. It is uſed in works of quicker diſpatch which do not need the bellows.

BLOWING *of a Flower*, among floriſts, an artificial proceſs, in order to bring a flower to diſplay itſelf with greater perfection and beauty than it would arrive at in the natural way of blowing.

BLOWING *of Glaſs*, one of the methods of forming the divers kinds of work in the glaſs manufacture.

The workman dips his blowing-pipe into the melting-pot, and by turning it about, the metal ſticks to the iron more firmly than turpentine. This he repeats three times. which is called gathering; he then rolls the end of his inſtrument with the hot metal thereon, on a piece of poliſhed iron, and the workman perceiving there is metal enough on the pipe, claps his mouth immediately to the other end of it, and blows gently through the iron tube, till the metal lengthens like a bladder about a foot: then he rolls it on a marble ſtone a little while to poliſh it, and blows a ſecond time, by which means he brings it into the form of a globe, of about eighteen or twenty inches in circumference. This globe may be flattened by returning it to the furnace, and brought into any form by ſtamp-irons, which are always ready.

For the method of making crown-glaſs, ſee CASTING of GLASS, &c.

For the manner of founding glaſs, and the materials of which it is compoſed, ſee GLASS.

BLOWING *of Tin* denotes the melting its ore, after being firſt burned to deſtroy the mundic.

BLUBBER, the fat of whales, and other large ſea animals, whereof is made train oil. See OIL.

BLUE, otherwiſe called Azure, one of the primitive colours of the rays of light.

Turnſole BLUE is uſed in painting on wood, and is made of the ſeed of that plant. The way of preparing it is, to boil four ounces of turnſole in a pint and half of water, in which lime has been ſlacked.

Dyers BLUE, one of their ſimple or mother colours uſed in the compoſition of others. It is made of woad, indigo, and a paſtel brought from Normandy. Some dyers heighten their blue, by adding brazil and other woods. See WOAD and INDIGO.

Pruſſian BLUE. This blue is next to ultramarine for beauty, if it be uſed in oil. This colour does not grind well in water.

BLUE *Bice* is a colour of good brightneſs, next to Pruſſian blue, and alſo a colour of a body, and will flow pretty well in the pencil.

Saunders BLUE is alſo of very good uſe, and may ſerve as a ſhade to ultramarine or the blue bice, where the ſhades are not required to be very deep, and is of itſelf a pleaſant blue, to be laid between the light and ſhades of ſuch a flower as is of a mazarine blue.

Lacmus, or *Litmus* BLUE. This is a beautiful blue, and will run in a pen as free as ink. It is made of lacmus, and prepared thus: Take an ounce of lacmus, and boil it in a pint of ſmall-beer wort, till the colour is as ſtrong as you would have it; then pour it off the liquor into a gallipot, and let it cool for uſe. This affords a beautiful colour, has extraordinary effects, and is a holding colour; if it be touched with aqua-fortis, it immediately changes to fine crimſon, little inferior to carmine.

BLUE *Japan*. Take gum-water, what quantity you pleaſe, and white lead a ſufficient quantity, grind them well upon porphyry, then take iſing-glaſs ſize, what quantity you pleaſe, of the fineſt and beſt ſmalt a ſufficient quantity, mix them well; to which add of your white-lead, before ground, ſo much as may give it a ſufficient body: mix all theſe together to the conſiſtence of a paint.

BLUEING *of metals* is performed by heating them in the fire, till they aſſume a blue colour; particularly practiſed by the gilders, who blue their metals before they apply the gold and ſilver leaf.

BLUE-MANTLE, in heraldry, the title of purſuivant at arms.

BLUENESS, the quality which denominates a body blue. As to the blueneſs of the ſkies, Sir Iſaac Newton obſerves, that all the vapours, when they begin to condenſe and coaleſce into natural particles, become firſt of ſuch a bigneſs as to reflect the azure rays before they conſtitute clouds or any other colour.

BLUNDERBUSS, a ſhort fire-arm with a wide bore, capable of holding a number of bullets at once.

BLUSHING, a ſuffuſion, or redneſs of the cheeks, excited by a ſenſe of ſhame, on account of a conſciouſneſs of ſome failing or imperfection.

Bluſhing is ſuppoſed to be produced from a kind of conſent or ſympathy between the ſeveral parts of the body, occaſioned by the ſame nerve being extended to them all. Thus the fifth pair of nerves, being branched from the brain to the eye, ear, muſcles of the lips, cheeks and palate, tongue and noſe, a thing, ſeen or heard, that is ſhameful, affects the cheeks with bluſhes, driving the blood into their minute veſſels, at the ſame time it affects the eye and ear. Mr. Derham further obſerves, upon this ſubject, that a ſavoury thing, ſeen or ſmelt, affects the glands and parts of the mouth; if a thing heard be pleaſing, it affects the muſcles of the face with laughter; if melancholy, it exerts itſelf on the glands of the eyes, and occaſions weeping, &c.

BMI, in muſic, the third note in the modern ſcale. See Scale.

* BOADICEA, a celebrated Britiſh queen, who lived in the firſt century. She was the widow of Praſutagus, king of the Iceni, and having ſuffered ſome of the moſt barbarous indignities from the Romans, who had proceeded to ſuch a pitch of brutality as to cauſe her to be publicly whipped, and her two daughters raviſhed; ſhe excited the Britons to a revolt: accordingly, an hundred and twenty thouſand of the latter, with Boadicea at their head, attacked the Roman colony, at Camelodunum, and ſlaughtered ſeventy or eighty thouſand Romans; committing the moſt ſhocking and unheard of cruelties. But Suetonius marching againſt them with about ten thouſand men, a bloody battle enſued, in which eighty thouſand Britons were ſlain, and the Romans gained the victory, with a very conſiderable loſs. This battle was fought in the ſixty-firſt year of the Chriſtian æra. This valiant queen, thus diſappointed of the completion of her revenge, diſpatched herſelf by poiſon.

BOARD, a long piece of timber, ſawed thin for building and ſeveral other purpoſes. See Timber.

BOARD, an office under the government. Thus we ſay, the board of trade and plantation, the board of works, ordnance, &c.

BOARDING, in a naval engagement, a deſperate and furious aſſault made by one ſhip on another, after having found every other method to reduce her ineffectual: it may be performed in different places of the ſhip, according to their circumſtances and ſituation, by the aſſailant detaching a number of men armed with piſtols and cutlaſſes on the decks of his antagoniſt, who ſtands in the ſame predicament with a city ſtormed by the beſiegers. This expedient, however, is rarely attempted by king's ſhips, which generally decide the combat without grappling each other; but chiefly practiſed by privateers, which bearing down on the enemy's quarter or broadſide, drop from the bowſprit, which projects over the defendant's deck, an earthen ſhell, called a ſtink-pot, charged with fiery and ſuffocating combuſtibles, which immediately burſts, catches fire, and fills the deck with inſufferable ſtench and ſmoke: in the middle of the confuſion thus occaſioned, the privateer's crew ruſh on board, under cover of the ſmoke, and eaſily over-power the aſtoniſhed enemy; unleſs they have cloſe quarters to which they can retreat and beat them off the deck. See Bowsprit, Close-Quarters. To prevent boarding, a high rope-netting, extended along the ſhrouds from one end of the ſhip to the other, has been frequently uſed; but raiſing a battalion with the fixed bayonets of the marines is, perhaps, more expedient.

BOATSWAIN *of a Ship*, the officer appointed to take care of the ſails, cables, rigging, boats, and anchors, to ſummon the crew to their duty, and direct them in the neceſſary buſineſs of the ſhip, and to puniſh delinquents.

BOB, a term uſed for the ball of a ſhort pendulum.

BOBBIN, a ſhort piece of wood turned in the form of a cylinder, with a little border jutting out at each end, bored through to receive a ſmall iron pivot. It ſerves to ſpin with the ſpinning wheel, or to wind thread, worſted, hair, cotton, ſilk, gold, and ſilver.

BOB-STAY, in naval affairs, a double rope paſſing through a ſhip's ſtem, or prow, and reaching up to the middle of the bow-ſprit, to which it is drawn very tight to ſecure and keep ſteady the bowſprit, which is alſo ſtrengthened by ſhrouds on each ſide.

* BODMIN, a borough town of Cornwall, that has a market on Saturdays, which is very conſiderable for corn and proviſions, and four fairs, on January 25, Saturday after Mid-Lent-Sunday, Wedneſday before Whit-Sunday, and December 6, for horſes, oxen, ſheep, cloth, and a few hops. It is ſeated between two high hills, and chiefly conſiſts of one long ſtreet. It is a corporation, governed by a mayor and his brethren, and ſends two members to parliament. It is thirty-ſix miles north-eaſt of Falmouth, and two hundred and thirty-two weſt of London. Long. 4. 5. W. Lat. 50. 32. N.

BODY, in philoſophy, a ſolid, extended, palpable ſubſtance; of itſelf merely paſſive, and indifferent either to motion or reſt, but capable of any ſort of motion, and of all figures and forms.

"We are as far, ſays Mr. Locke, "from the idea of ſubſtance of body, by "the complex idea of extended, figured, "coloured, and all other ſenſible qualities, "which is all we know of it, as "if we knew nothing at all; nor after "all the acquaintance and familiarity, "which we imagine we have with matter, "and the many qualities men aſſure "themſelves they perceive and know in "bodies, will it, perhaps upon examination, "be found that they have any "more or clearer primary ideas belonging "to body, than they have belonging "to immaterial ſpirit. The primary ideas "we have peculiar to body, as contra-"diſtinguiſhed to ſpirit, are, the cohe-"ſion of ſolid, and conſequently ſe-"parable parts; and a power of com-"municating motion by impulſe. Theſe "are the original ideas proper and pe-"culiar to body; for figure is but the "conſequence of finite extention."

BODY, among painters, as to bear a body, a term ſignifying that the colours are of ſuch a nature, as to be capable of being ground ſo fine, and mixing with the oil ſo entirely, as to ſeem only a very thick oil of the ſame colour.

BODY, in the art of war, a number of forces, horſe and foot, united and marching under one commander.

Main BODY *of an Army*, the troops encamped in the center between the two wings, and generally infantry; the other two bodies are the van-guard and the rear-guard: theſe being the three into which an army, ranged in form of battle, isdivided

* BOEDROMIA, *Boedromia* in Grecian antiquity, an Athenian feſtival, in memory of Ion, the ſon of Xuthus, who came to the aſſiſtance of the Athenians in the reign of king Erectheus, when they were invaded by Eumolpus, the ſon of Neptune: or, according to Plutarch, in memory of a victory obtained by Theſeus, againſt the Amazons, in the month Boedromion.

* BŒHMEN (JACOB) a famous viſionary, who pretended to receive frequent viſions, or as he himſelf expreſſes it, to be wrapt, by the divine drawing, in which he ſays, he remained one time ſeven whole days, in the higſteſt joy. His education extended no farther than to read and write, and was bred a ſhoe-maker.

* BOERHAAVE (HERMAN) one of the moſt learned phyſicians ſince Hippocrates, was born at Vourhout, a village near Leyden, the 31ſt of December, 1668. Having acquired great knowledge in the learned languages, and in mathematics, he joined the ſtudy of phyſic to philoſophy and theology, beginning with Hippocrates, whoſe works he digeſted in ſuch a manner as to render them perfectly familiar to him. Afterwards he made himſelf acquainted with the moſt authentic modern authors, particularly with our Sydenham, to whoſe name he uſually prefixed the epithet Immortal. He next applied to chemiſtry and botany; but ſtill intended to engage in the miniſtry: however, going from Harderwick in Guelderland, where he had taken the degree of doctor of phyſic, in order to return to Leyden, he met with an invincible obſtruction to his mounting the pulpit; for being in a paſſage-boat, ſome diſcourſe happening to be ſtarted on the doctrine of Spinoſa, he attempted to defend him in ſome particulars; upon which a paſſenger raiſed a report that Boerhaave was become a Spinoſiſt. The great man finding that ſuch prejudices gained ground, was unwilling to riſque the refuſal of a licence for the pulpit, when he had ſo fair a proſpect of riſing by phyſic. He therefore applied wholly to the ſtudy of medicine, and gradually roſe from being lecturer to the higheſt dignity, the rectorſhip of the univerſity of Leyden, becoming, in the mean time, a member of the Royal Society of London, and of the Academy of Sciences at Paris. He was remarkable for his piety, his modeſty, his humanity, and his private acts of benificence; yet he amaſſed great wealth, and died on the 23d of September, 1738, in the ſixty-ninth year of his age. He wrote variety of pieces which are all greatly eſteemed.

BOG, a quagmire, covered indeed with graſs, but not ſolid enough to ſupport the weight of the body; in which ſenſe, it differs only from marſhes or fens, as a part from the whole: ſome even reſtrain the term bog to quagmires pent up between two hills: whereas fens lie in champaign and low countries, where the deſcent is very ſmall. To drain boggy lands, a good method is, to make trenches of a ſufficient depth to carry off the moiſture; and if theſe are partly filled up with rough ſtones, and then covered with thorn buſhes and ſtraw to keep the earth from filling up the interſtices, a ſtratum of good earth and turf may be laid over all; the cavities among the ſtones will give paſſage to the water, and the turf will grow at top, as if nothing had been done See FEN.

* BOHEMIA, a kingdom of Europe, uſually deemed a part of Germany. It

comprehends Proper Bohemia, Moravia, Luſatia, and Sileſia. It is bounded on the eaſt by Poland, on the north by Brandenburg; on the weſt by Saxony, Miſnia, and Culembach; on the ſouth by Bavaria, Auſtria, and a part of Hungary. Proper Bohemia is about one hundred and ninety-five miles in length, and one hundred and fifty in breadth. Bohemia taken in general, is one of the higheſt countries in Europe, for there is no river enters into it, and yet many paſs out, of which the moſt conſiderable are the Elbe, the Oder, the Viſtula, and the Morava. The air is cold and unwholſome, for they have more epidemical diſeaſes there than in the neighbouring countries. There are mines of ſilver, copper, lead, and even ſome veins of gold. The majority of the people are Roman Catholics, but there are many Proteſtants after the confeſſion of Augſburg, ſome Calviniſts, and Moravians. There are Jews at Prague, but they pay heavy taxes for living there. The Bohemians are lively, robuſt, hardy, but luxurious in their eating and drinking.

BOHEMIA PROPER, is the moſt conſiderable part of the kingdom of Bohemia, and lies to the weſt of the other parts. It is ſurrounded by high mountains, and is watered by ſeveral rivers, the principal of which are the Elbe, the Moldaw, the Egerand, and the Miza. It is bounded on the weſt by Franconia and the Upper Palatinate, on the eaſt by Sileſia and Moravia, on the ſouth by Bavaria and Auſtria, and on the north by Miſnia and Luſatia. It is divided into eighteen circles.

Bohemia Proper is the moſt fruitful part of the whole kingdom, and for that reaſon exports a great deal of corn. The rivers are ſtored with fiſh; the woods with wild fowl, deer, and wild boars; the paſture grounds are covered with tame cattle; in the mines are gold, ſilver, iron, copper, tin, precious ſtones, as amethyſts and rubies.

BOHOL, one of the Philippine Iſlands, in Aſia, lying to the north of the iſland of Mindanao, and ſouth-weſt of Leyte. Long. 122. 5. E. Lat. 10. 0. N.

BOI, commonly called *Il Siracuſano*, the Syracuſan, was a famous cheſs player at the court of Spain, under king Philip II. from whom he received ſeveral fine preſents; he alſo received ſome from Urban VIII. who was ſo pleaſed with his ſkill, that he offered him a biſhopric, which he refuſed. Having the misfortune to be taken by corſairs, and to ſee himſelf reduced to ſlavery, he found the way, by means of his ſkill at this game, to make their ſavage tempers tractable; they admired him, treated him with humanity, and demanded no other ranſom than the inſtructions he gave them for a few months in playing at cheſs.

BOIANO, a town of Italy in the kingdom of Naples, and county of Moleſe, with a biſhop's ſee. It is ſeated at the foot of the Appenines, near the river Tilerno, ten miles ſouth of Moliſe, thirty north weſt of Benevento, and forty-five north of Naples. Long. 14. 38. E. Lat. 41. 30. N.

BOIARDO (MATTEO MARIA) of Ferrara, count of Scandiano, celebrated for his Italian poems, lived in the fifteenth century, and died in 1494. His principal work is his *Orlando inamorato.* His Latin Eclogues and Sonnets are alſo much admired.

BOIGUACU, the largeſt of all ſerpents, being from twenty-four to forty feet long, and thick in proportion. It is found in the Eaſt and Weſt Indies, where the Europeans, as well as the natives, are extremely fond of it as food.

BOILEAU (GILES) member of the French academy, and the eldeſt brother of the celebrated Boileau Deſpreaux, wrote a Tranſlation of Epictetus, two Diſſertations againſt Menage and Caſtor, and ſome other works. He died in 1669, aged thirty-eight.

BOILEAU (JAMES) brother of the former, and a learned doctor of the Sorbonne, was born at Paris, on the 16th of March, 1635. After having been dean and grand vicar of Sens under M. de Goudrin, he returned to Paris in 1694, and was made canon of the holy chapel. He died when dean of the faculty of divinity, on the firſt of Auguſt, 1716. He publiſhed a great number of curious works, the principal of which are, 1. The *Decretal ſuper ſpecula de Magiſtris.* 2. *De Antiquo jure Preſbyterorum, in regimine Eccleſiaſtico.* 3. *De Antiquis & majoribus Epiſcoporum cauſis,* in quarto. 4. An Hiſtory of Auricular Confeſſion, in Latin, &c.

* BOILEAU (NICHOLAS) ſurnamed Deſpreaux, one of the moſt celebrated French poets, was the ſon of Giles Boileau, ſecretary to the great chamber of parliament, and was born in 1636, at Crone, a ſmall village, where his father had a country houſe, near Villeneuve St. Georges. After he had gone through a courſe of polite literature and philoſophy, he engaged in the ſtudy of the law, in which he made ſuch progreſs, that on De-

cember 4, 1656, he was admitted an advocate; but he could not adapt himſelf to a ſcience which often obliges thoſe who follow it to clothe falſhood in the garb of truth. He reſolved therefore to take another courſe, and giving a looſe to his paſſion for the belles lettres, and eſpecially for poetry, he proceeded ſolely under his own conduct, and took poſſeſſion of one of the foremoſt places on the French Parnaſſus. The public gave his works the encomium they deſerved, and Lewis XIV. who always loved to encourage the ſciences and polite literature, was not only pleaſed to have Mr. Boileau's works read to him conſtantly as he compoſed them, but ſettled a yearly penſion of two thouſand livres upon him, and gave him the privilege of printing all his works. He was afterwards choſen a member of the French academy, and alſo of the Academy of Inſcriptions and Medals. This great man, who was as remarkable for his integrity, his innocence, and diffuſive benevolence, as for the keenneſs of his ſatires, died on the 2d of March, 1711, in the ſeventy-fifth year of his age.

BOILING, or EBULLITION, in phyſics, the agitation of a fluid body, ariſing from the application of fire, &c. The phænomena of boiling may be thus accounted for: the minute particles of the fuel, being detached from each other, and impelled *in orbem* with a great velocity; that is, being converted into fire, paſs the pores of the containing veſſel, and mix with the fluid. By the reſiſtance they here meet, their motion is deſtroyed; that is, they communicate it wholly to the quieſcent water: hence ariſes, at firſt, a ſmall inteſtine motion in the water, and from the continued action of the firſt cauſe, the effect is increaſed, and the motion of the water continually accelerated; ſo that, by degrees, it becomes ſenſibly agitated: but now the particles of fire, ſticking on thoſe in the loweſt ſurface of the water, will not only give them an impulſe upwards, contrary to the laws of equilibrium, but will likewiſe render them ſpecifically lighter than before, ſo as to determine them to aſcend according to the laws of equilibrium; and this, either by inflating them into little veſicles, by the attraction of the particles of water around them, or by breaking and ſeparating the little ſpherules of water, and ſo increaſing the ratio of their ſurface to their ſolid content. There will be, therefore, a conſtant flux of water, from the bottom to the top of the veſſel, and conſequently a reciprocal flux from the top to the bottom; that is, the upper and under water will change places: and hence we have the reaſon of that phænomena of the water being hot at top, ſooner than at bottom.

Again, an intenſe heat will diminiſh the ſpecific gravity of water, ſo as not only to make it mount in water, but alſo in air: whence ariſe the phænomena of vapour and ſmoke, though the air, incloſed in the interſtices of the water, muſt be allowed a good ſhare in this appearance; for that air, being dilated, and its ſpring ſtrengthened by the action of the fire, breaks its priſon, and aſcends through the water into the air, carrying with it of the contiguous ſpherules of water, ſo many as ſhall hang in its villi, or as can adhere immediately to it.

The particles of the air, in the ſeveral interſtices of the fluid maſs thus expanded and moving upwards, will meet and coaleſce in their paſſage; by which means great quantities of the water will be heaved up and let down alternately, as the air riſes up, and again paſſes from the water; for the air, after coalition, though it may buoy up a great heat of water by its elaſticity, while in the water, yet cannot carry it up with itſelf, into the atmoſphere; ſince, when once got free from the upper ſurface of the water in the veſſel, it will unbend itſelf in the atmoſphere, and ſo its ſpring and force become juſt equal to that of the common unheated air: and hence we ſee the reaſon of the principal phænomena of boiling, viz. the fluctuating of the ſurface of the water.

The ingenious Mr. Amenton has ſhewn, that water heated to a degree of boiling, will not receive any further heat, how much ſoever the fire be encreaſed: yet this excellent diſcovery may receive a conſiderable improvement from what Mr. Fahrenheit has obſerved, viz. that the heat of the ſame boiling water is always regularly greater, by how much the weight of the atmoſphere is greater which preſſes upon its ſurface: and again, that the ſame heat of the boiling water diminiſhes, as the weight of the incumbent atmoſphere grows leſs. Hence, in marking the degree of heat in boiling water, it will be neceſſary to note the weight of the atmoſphere at the ſame time by the barometer; otherwiſe no certain meaſure will be expreſſed.

BOLES, a genus of earths, moderately coherent, ponderous, ſoft, and not ſtiff and viſcid; compoſed of fine particles, ſmooth to the touch, eaſily breaking between the fingers, readily diffuſible in water, and freely and eaſily ſubſiding from it. Three kinds of boles are ranked among medicinal earths, Armenian, red, and white. That met with in the ſhops, under the name of Armenian, is not the produce of Armenia, or any of the oriental countries; but, like the others, of different parts of Europe, as Bohemia, Sileſia, Saxony, Hungary, Tranſylvania, France, Norway, &c. The French employ chiefly the bole of Blois. We need not be ſolicitous about the particular place where any of the boles have been dug, provided they are pure and of good quality.

BOLE *Armenic*, is of a pale colour, between red and yellow, ſmooth and ſlippery to the touch, ſomewhat gloſſy, pure from ſand or any perceptible gritty matter. It readily crumbles betwixt the fingers, and adheres to the tongue. Soſtened with water, it forms a ſmooth paſte; diluted with a larger quantity of water, it remains for a conſiderable time ſuſpended.

Bole armenic, like moſt of the other coloured earths, contains a portion of ferrugineous matter, to which its colour is owing, and which may be ſeparated by the magnet, after the bole has been calcined with oil or other inflammable matters. It is likewiſe impregnated with vitriolic acid; and hence, when mixed with nitre or ſea-ſalt, it extricates the acids of thoſe ſalts in the fire.

This earth is employed medicinally as a ſtyptic, both internally and externally: a virtue which ſeems to proceed from its furrugineous impregnation: to the antipeſtilential and elexipharmic qualities, for which it has long been celebrated, it has no pretence; nor have the abſorbent ones, which ſome aſcribe to it, any juſt foundation. It is prepared or purified by waſhing it over with water; the pure bole remaining ſuſpended a conſiderable time, ſo as to be poured off with the liquor, whilſt the ſandy or other groſſer matter remains behind: after the bole has ſettled from the water, it is moderately dried: formed into rolls or cakes, and afterwards further exficcated for uſe. Some have condemned this method, as depriving the bole of a certain central ſalt: but this earth contains nothing that water is capable of extracting. Bole armenic, treated with water, remained undiminiſhed in weight; and neither the bole or the water received any ſenſible alteration.

Red BOLE. The common ſort of this earth is coarſer than the Armenian, and participates more largely of iron; hence it is never given internally, unleſs to cattle.

White BOLE is brought to us ready waſhed and formed into large rolls or cylindric globes, not of a chalky whiteneſs, but rather of an aſh-colour. Formerly it came only from Tuſcany, or the iſland Elva: at preſent it is ſupplied chiefly from Norway, the iſland Bornholm, or places nearer home. It differs from the two preceding in containing no manifeſt irony matter, and conſequently in wanting their aſtringency. It has been recommended as an abſorbent; but experiments made upon it with acids, ſhew that it little deſerves that character, any more than the other boles. Some have a method of recovering the luſtre of pearls, eſpecially the Scotch ones, by warming them a little over the fire, and rubbing them with powdered white bole. *Newman's Chemiſtry.*

* BOLOGNA, a city of Italy, in the ſtate of the church, and capital of the Bologneſe, with an archbiſhop's ſee, is one of the ancienteſt, largeſt, and fineſt cities in Italy. It is very well built, and the ſtreets from one end to the other have handſome piazzas, wherein paſſengers may walk without being incommoded by the ſun or rain. It is about ſix miles in circumference, but is not perfectly round. It is ſurrounded with very large and agreeable plains, (except on the ſouth ſide) that produce every thing that is uſeful and neceſſary for life. It is ſeated at the foot of Mount Appenine, which is on the ſouth, and has twelve gates. The river Savona waſhes its walls, and the rivulet Rheno runs thro' the midſt of it, forming ſtreams therein. The tower, called Aſinelli, ſtands in the middle of the city, and is reckoned the higheſt in Italy, it being ſix hundred and ſeventy-ſix feet in height. Near this tower is the church of St. Petronius, which is one of the largeſt and moſt ſtately in Italy. At a ſmall diſtance from this beautiful church there is a handſome edifice, wherein the belles lettres are taught, and is the moſt celebrated univerſity in Italy, eſpecially for the ſtudy of the civil law. The cathedral church is well worth the notice of foreigners, as well for the beauty of the ſtructure, as for the fine paintings and rich ſtatutes to be ſeen therein. The church of St. Dominic is one of the moſt magnificent in Bologna. The chapel dedicated to the honour of this ſaint is a finiſhed work. The monaſtery of the Dominicans is not leſs magnificent than the church, where one hundred and

twenty monks live in a ſplendid manner. The library and the cellar are worth obſervation; for the former is full of books, and the latter of exquiſite wines. There are no leſs than four hundred ſilk mills in this city, beſides which it carries on a trade in wax, hemp, flax, hams, ſauſages, waſh-balls, ſnuff, and perfumes. This city is twenty-three miles ſouth-weſt of Modena, and one hundred and forty-five north-by-weſt of Rome. Long. 11. 30. E. Lat. 44. 27. N.

BOLONIAN, belonging to Bologna. Hence,

BOLONIAN *Stone*, is a ſulphureous kind of ſtone, about the bigneſs of a walnut, found near Bologna; which, when duly prepared by calcination, makes a a ſpecies of phoſphorus. See PHOSPHORUS.

BOLSTERS, in naval affairs, a ſort of ſmall cuſhions, ſtuffed with tarred canvas, laid between the collar, or lower part of the main-ſtay, and the upper part of the ſtem, to prevent the ſtay from being fretted or galled by rubbing when the ſhip pitches at ſea.

BOLSTERS *of a Saddle*, thoſe parts of a great ſaddle which are raiſed upon the bows, both before and behind, to hold the rider's thigh, and keep them in a right poſture.

BOLT, among builders, an iron faſtening fixed to doors and windows. They are generally diſtinguiſhed into plate, round, and ſpring bolts.

BOLTS, in gunnery, are of ſeveral ſorts, as 1. Tranſum bolts that go between the cheeks of a gun-carriage, to ſtrengthen the tranſums. 2. Priſe bolts, the large knobs of iron on the cheeks of a carriage, which keep the handſpike from ſliding, when it is poizing up the breech of a piece. 3. Traverſe bolts, the two ſhort bolts that, being put one in each end of a mortar carriage, ſerve to traverſe her. 4. Bracket bolts, the bolts that go through the cheeks of a mortar, and by the help of quoins keep her fixed at the given elevation. And, 5. Bed bolts, the four bolts that faſten the brackets of a mortar to the bed.

BOLT *of Canvas*, in commerce, the quantity of twenty-eight ells.

BOLT-ROPE, in naval affairs, a rope paſſing round the ſail, to which the edges of it are ſewed to prevent the ſail from tearing: the bottom part of it is called the foot-rope, the ſides leeches, and if the ſail be oblong or ſquare, the upper part is called head-rope.

BOLTERS, or BOULTERS, a kind of ſieves for meal, having the bottoms made of woollen, hair, or wire.

BOLTING, or BOULTING, the act of ſeparating the flour from the bran, by means of a bolter.

BOLTING-MILL, a verſatile engine for ſifting with more eaſe and expedition. The cloth round this is called the boulter.

BOLUS, an extemporaneous form of a medicine, ſoft, coherent, a little thicker than honey, the quantity of which is a little morſel or mouthful.

BOLZAS, a ſort of ticking which comes from the Eaſt-Indies.

BOMB, in military affairs, a large ſhell of caſt iron, having a great vent to receive the fuſee, which is made of wood. If no defect is found in the globe, its cavity is filled with whole gun-powder; a little ſpace or liberty is left, that when a fuſee or wooden tube, of the figure of a truncated cone, is driven thro' the aperture, and faſtened with a cement made of quick-lime, aſhes, brick duſt, with ſteel filings, worked together in a glutinous water; or, of four parts of pitch, two of colophony, one of turpentine, and one of wax; the powder may not be bruiſed. This tube is filled with a combuſtible matter, made of two ounces of nitre, one of ſulphur, and three of gunpowder-duſt, well rammed. This fuſee, ſet on fire, burns ſlowly, till it reaches the gunpowder, which goes off at once, burſting the ſhell to pieces with incredible violence: whence the uſe of bombs in beſieging towns. Care muſt be taken, that the fuſee be ſo proportioned, that the gunpowder do not take fire before the ſhell arrives at the deſtined place; to prevent which, the fuſee is frequently wound round with a wet clammy thread.

BOMB-BATTERY. See BATTERY.

BOMBARDIER, one employed about a mortar. His buſineſs is to drive the fuſee, fix the ſhell, load and fire the mortar, and to work with the fire-workers on all ſorts of fire works.

BOMBARDING, the act of attacking a city or fortreſs, by throwing bombs into it, to ruin or ſet on fire the houſes, magazines, &c.

BOMBARDO, a muſical inſtrument much the ſame as the baſſoon, and uſed as a baſs to the hautboy.

BOMBASINE, in commerce, a kind of ſilk-ſtuff manufactured at Milan, and thence ſent into France and other countries.

BOMBAST, in literary matters, a high ſtile, ſtyle made up of hard words, with little or no meaning.

* BOMBAY, an iſland on the weſt coaſt of the peninſula on this ſide the Ganges, in Aſia. It formerly belonged to the Portugueſe, but was given to England by the marriage of the infanta of Portugal with king Charles II. and now belongs to the Eaſt-India company. It is chiefly remarkable for its fort or caſtle, its harbour, and its convenient ſituation for trade. It is inhabited by ſeveral nations, but chiefly Engliſh, Portugueſe, and Indians, to the number of about fifty thouſand. The preſident of the Engliſh factory at Surat is uſually governor of this iſland, who lives in great ſplendor, and is very nobly attended. The chief town is about a mile in length, wherein all religions are tolerated, as well as in the reſt of the iſland. The Indians have ſmall pagods, which will not hold above nine or ten people. It rains here in June and July without intermiſſion for ten or fifteen days, which puts an end for that time to navigation and travelling by land; after this they become gradually leſs and leſs till the middle of September, and then intirely ceaſe till the return of the ſeaſon the next year; and yet, on the caſt of the peninſula, on the coaſt of Coromandel, from April to September, the weather is fair. The trees are green all the year. However, theſe rains are very uſeful for the production of rice: for, unleſs the ground is flat, and well ſoaked with water, there can be no hopes of a crop. There are a great many venemous creatures in this iſland, among which the ſpiders are very large. Bombay is one hundred and thirty miles ſouth of Surat. Long. 73. 0. E. Lat. 19. 0. N.

BOMBUS, in medicine, a reſounding and ringing noiſe in the ear, accounted by Hippocrates a mortal ſymptom in acute diſeaſes.

BOMBYLIUS, in natural hiſtory, the name of the common humble-bee.

BOMBYLOPHAGES, in the hiſtory of inſects, humble-bee-eater, the name of a fly of the tipula kind, which is larger and ſtronger than the common kinds, and loving honey, without knowing how to extract it from the flower, it ſeizes on the humble-bees, and deſtroys them, in order to get the bag of honey which they contain. It is chiefly found in mountainous places.

* BONA DEA, the Good Goddeſs, in heathen mythology, one of the names of Cybele. Others ſay, ſhe was a Roman lady, the wife of Faunus, famous for her chaſtity, and after her death was deified. She was worſhipped at Rome, and her ſacrifices were performed only by matrons, and in ſo ſecret manner, that it was no leſs than death for any man to be preſent at the aſſembly.

BONA-FIDES, or BONA FIDE, among lawyers, ſignifies ſuch a thing was done really without either fraud or deceit. A man is ſaid to poſſeſs any thing *bona-fide*, who is ignorant of that thing's being the property of another; on the contrary, he is ſaid to poſſeſs a thing *mala-fide*, who is conſcious of its being the property of another.

BONA-NOTABILIA, ſuch goods as a perſon dying has in another dioceſe than that wherein he dies, amounting to the value of five pounds at leaſt: in which caſe, the will of the deceaſed muſt be proved, or adminiſtration granted in the court of the archbiſhop of the province, unleſs by compoſition, or cuſtom, any dioceſes are authoriſed to do it, when rated at a greater ſum.

BONANA, in botany, a genus of plants, alſo called muſa. See MUSA.

BONASUS, in zoology, a ſpecies of wild ox, very thick and bulky, and furniſhed with a mane like a horſe. It is a very unwieldly animal, being larger than our bull; the horns are but ſhort, and ſo turned as to be unfit for wounding: the noſtrils are wide, and the ears long and broad. The colour of the animal is a deep tawny; only the forehead and the breaſt are white, and the mane of a darker colour than that of the reſt of the body. When purſued, it does not attempt to defend itſelf with its horns, but kicks, and diſcharges its dung to a great diſtance againſt the purſuers.

BOND, a deed, by which a perſon obliges himſelf to perform certain acts: ſuch as to pay a certain ſum, or to anſwer for another, or to ſerve an apprenticeſhip with a maſter. In England, a bond is a deed or obligatory inſtrument in writing, whereby a perſon binds himſelf to another, to pay a ſum of money, or to do ſome other act, as to ſtand to an award, perform a will, &c. It contains an obligation, with a penalty annexed, and a condition which expreſsly mentions what money is to be paid, or what other things are to be performed, and the limited time for the performance thereof, for which the obligation is peremptorily binding.

BONE, in anatomy, a hard, brittle, inſenſible part of the body, affording form and ſupport to the whole machine.

Eminences of a BONE. We underſtand by theſe all ſorts of riſings, prolongations or productions obſervable on its ſurface. Theſe are of two kinds; in the firſt, the riſings are continuous with the reſt of the bone, and make one piece with it; in the other, they are as it were contiguous only, appearing to be parts added to, or united with, the body of the bone.

The riſings of the firſt kind are termed apophyſes, from a Greek word, ſignifying an excreſcence; becauſe they grow or ſhoot out immediately from the bone itſelf; ſuch are the ſharp eminences of the lower jaw, &c.

The others are named epiphyſes, or appendices, becauſe they appear to be parts added to the reſt of the bone, and ſtill diſtinguiſhed from it by the intervention of another ſofter ſubſtance called a cartilage.

External Cavities of a BONE.—Depreſſions perceivable in the outſides of bones. Theſe are in great numbers; very different from one another, and they are called by different names.

They may however be diſtinguiſhed into two general kinds; thoſe which receive ſoft parts, as the cavities which contain the brain, the eyes, the marrow, &c. and thoſe which receive hard parts; that is, where the cavity of one bone contains the eminence of another.

Subſtance of BONES.---The ſubſtance of bones is found on examination to be a texture of ſolid fibres differently diſpoſed, according to the particular conformation of each bone. Theſe bony fibres are eaſily diſtinguiſhed on the ſurface of the ribs, where they may be ſeparated much after the ſame manner as we do thoſe of whale-bone or horn. We may likewiſe diſcover them by the fiſſures in bones, which have been long expoſed to the ſun or air, or any otherwiſe dried.

The ſubſtance of bones is partly compact or ſolid, partly cellulous or ſpongy, and partly reticular.

The ſolid part lies chiefly towards the outſide of bones, the cellulous part toward the inſide. The firſt is moſt conſiderable in the large hollow bones, the other in thoſe which have no remarkable cavities.

The ſolid part is formed by laminæ, diſpoſed in different ſtrata. The ſpongy part conſiſts chiefly of the plates and filaments variouſly interwoven: the filaments alone form the reticular texture principally obſervable in the long hollow bones.

Internal Cavities of BONES---Beſides the cavities which appear in examining the external conformation of bones, there are others obſervable in examining their internal ſtructure: which may all be reduced to three kinds, very different from one another.

The firſt kind comprehends the large internal cavities found chiefly in the middle of the long bones, which are nearly of a cylindrical figure, ſuch as the os humeri, ulna, radius, os femoris, tibia, fibula, the bones of the metacarpus, metatarſus, fingers and toes. In theſe the cavities are proportionable to the length and thickneſs of the bones.

The ſecond kind of internal cavities conſiſts of the cells and intervals in the cellulous portion of bones.

Of theſe ſome are large, ſmall, ſingle, double, or more compounded, and of theſe laſt ſome contain ſeveral ſmall ones within them. Others are round, flat, oblong, tubular, oval, angular, ſquare, irregular, &c. and of theſe the oblong and tubular lie in directions nearly parallel to the length of the bone. Almoſt all theſe cells communicate with one another in different manners.

The third ſort of internal cavities comprehends the ducts and pores found in the ſubſtance of bones. *Winſlow's Anatomy.*

BONIS NON AMOVENDIS, in law, a writ directed to the ſheriffs of London, &c. charging them, that a perſon againſt whom judgment is obtained, and proſecuting a writ of error, be not ſuffered to remove his goods until the error is determined.

BONITO, a beautiful fiſh, of the tunny kind, and called by ſome curvata pinima. It is a large ſea fiſh, with a long, broad, and thick body: its eyes are large, as alſo its gills; and the greater part of its body is free from ſcales.

* BONNER (EDMUND) biſhop of London, was born at Henley, in Worceſterſhire, and was the ſon of a poor man of that place. He was educated at the univerſity of Oxford, where he ſtudied civil and canon law; but was leſs diſtinguiſhed by his learning than by his dexterity and ſkill in the management of affairs, and for this he was taken notice of by cardinal Wolſey, who made him his commiſſary for the faculties. After the cardinal's death, he inſinuated himſelf into the good graces of king Henry VIII. and became one of his chaplains, a favourer of the Lutherans, a promoter of that king's divorce from queen Catharine of Spain, and of all his proceedings in abrogating the pope's ſupremacy. He inſinuated himſelf into the favour of Thomas Cromwell, ſecretary of ſtate, by whoſe recommendation

he was employed as ambaſſador at ſeveral courts, and particularly in 1533, was ſent to pope Clement VII. then at Marſeilles, upon the excommunication decreed at Rome againſt king Henry VIII. on account of his divorce; and to deliver that king's appeal to the next general council lawfully called. He was alſo employed in embaſſies to the emperor and the kings of Denmark and France; and in 1538, while he was embaſſador in the laſt mentioned kingdom, was nominated to the biſhopric of Hereford; but before his conſecration was tranſlated to the ſee of London, in 1539. During that reign he appeared zealous in promoting the Reformation in this kingdom, though there is great reaſon to ſuſpect that he acted all this while againſt his conſcience, and was a thorough papiſt in his heart; for ſoon after the acceſſion of Edward VI. he ſcrupled to renounce the authority of the biſhop of Rome, for which he was committed priſoner to the Fleet; but was ſoon after releaſed on his recanting his proteſtation. He now outwardly complied with the methods taken to advance the Reformation; though he privately uſed all poſſible means to obſtruct it. However, being afterwards charged with neglecting the obſervance of the king's injunctions, he was committed to the Marſhalſea, and deprived of his biſhopric; but he ſoon moſt ſeverely revenged himſelf on his enemies; for after the acceſſion of queen Mary he was reſtored to his biſhopric, and made vicegerent and preſident of the convocation; he then viſited his dioceſe in order to root up all the ſeeds of the Reformation, and ſet up the maſs again at St. Paul's before the act for reſtoring it was paſſed. He was in the commiſſion for turning out ſome of the reformed biſhops, and being known to be of a fierce and cruel diſpoſition, biſhop Gardiner, in 1555, left wholly to him the condemning and burning of heretics, when, during that and the three following years, he moſt inhumanly committed to the flames, and otherwiſe deſtroyed, hundreds of innocent perſons, for refuſing to embrace the groſs errors of popery. However, at queen Elizabeth's acceſſion to the throne, he had the confidence to go and meet her at Highgate, with the reſt of the biſhops; but ſhe looked on him as ſo much defiled with blood, that ſhe could not ſhew him any mark of her favour; however, he remained for ſome months unmoleſted; but being called before the privy-council, on the 30th of May 1559, and refuſing to take the oath of allegiance and ſupremacy, he was a ſecond time deprived of his biſhopric, and ſent to the Marſhalſea, where he lived ſeveral years, and died there on the 5th of September, 1569.

BONNET, in naval affairs, an additional part to be laced to the bottom of a ſail in light winds, and taken off again in ſtormy weather. They are uſed only in ſmall veſſels.

BONNET, in fortification, a ſmall work, conſiſting of two faces, having only a parapet with two rows of paliſadoes, of about ten or twelve feet diſtance: it is generally raiſed before the ſaliant angle of the counterſcarp, and has a communication with the covered-way, by a trench cut through the glacis, and paliſadoes on each ſide.

BONNET A'PRETRE, or *Prieſt's* BONNET, in fortification, an out-work, having at the head three ſaliant angles, and two inwards. It differs from the double tenaille only in this, that the ſides, inſtead of being parallel are like the queue d'aronde, or ſwallow's tail; that is narrowing or drawing cloſe at the gorge, and opening at the head.

BONNY, in mineralogy, a name given by our miners to a bed of ore found in many places in hills, of five or ſix fathom deep, and two or ſomewhat leſs than that, in thickneſs, in the largeſt ſort; but there are ſmaller, to thoſe of a foot long. They differ from the ſquats only in being round beds of ore, whereas the ſquats are flat. See SQUAT.

* BONUS EVENTUS, in heathen mythology, one of the Dii Conſentes, whoſe ſtatue had a patera in his right hand, and in his left an ear of corn. This was one of the emblematical deities to whom the Romans addreſſed their petitions for ſucceſs in their undertakings. His ſtatue was placed in the capitol, together with his wife or ſiſter Bona Fortuna or Good Fortune.

BONZES, Indian prieſts, who, to diſtinguiſh themſelves from the laity, wear a chaplet round their necks, conſiſting of an hundred beads, and carry a ſtaff, at the end of which is a wooden bird; they live upon the alms of the people, and yet are very charitably diſpoſed, maintaining ſeveral orphans and widows out of their own collections. The Tonquineſe have a pagod, or temple, in each town, and every pagod has at leaſt two bonzes belonging to it; ſome have thirty or forty. The bonzes of China are the prieſts of the Fohiſts, or ſect of Fohi; and it is one of their eſtabliſhed tenets, that there are rewards allotted for the righteous, and puniſhments for the wicked, in the other world; and that there are various manſions, in which the ſouls of men will reſide, according to their different degrees of merit.

BOOBY, a bird of prey, nearly allied to the gooſe-kind, common about Jamaica.

BOOK, *Liber*, the compoſition of a man of wit or learning, to communicate ſomewhat he has invented, experienced, or collected, to the public, and thence to poſterity; being alſo of a competent length to make a volume. In this ſenſe, a book is diſtinguiſhed from a pamphlet, by its greater length; and from a tome, or volume, by its containing the whole writing. According to the ancients, a book differed from an epiſtle, not only in bulk, but in that the latter was folded, and the former rolled up; not but that there are divers ancient books now extant, under the names of epiſtles.

Origin of BOOKS. We have nothing that is clear on that ſubject. The books of Moſes are doubtleſs the oldeſt books now extant; but there were books before thoſe of Moſes, ſince he cites ſeveral. Of profane books, the oldeſt extant are Homer's poems, which were ſo even in the time of Sixtus Empiricus; though we find mention in Greek writers of ſeveral others prior to Homer, as Hermes, Orpheus, Daphne, Horus, Linus, Muſæus, Palamedes, Zoroaſter, &c. but of the greater part of theſe there is not the leaſt fragment remaining; and the remaining pieces, which go under their names, are generally held, by the learned, to be ſuppoſititious. Among the Greeks, it is to be obſerved, the oldeſt books were in verſe, which was prior to proſe. Herodotus's hiſtory is the oldeſt book extant of the proſaic kind.

Materials of BOOKS. Books were firſt written on ſtones, witneſs the Decalogue given to Moſes: then on the parts of plants, as leaves, chiefly of the palm-tree the rind and barks, eſpecially of the tilla, or phillyrea, and the Egyptian papyrus. By degrees wax, then leather, were introduced, eſpecially the ſkins of goats and ſheep, of which at length parchment was prepared: then lead came into uſe; alſo linen, ſilk, horn, and laſtly, paper itſelf.

Form of BOOKS. The firſt books were in the form of blocks and tables: but as flexible matter came to be wrote on, they found it more convenient to make their books in the form of rolls: they were compoſed of ſeveral ſheets, faſtened to each other, and rolled upon a ſtick, or umbilicus; the whole making a kind of column, or cylinder, which was to be managed by the umbilicus as a handle, it being reputed a crime to take hold of the roll itſelf: the outſide of the volume was called *frons*; the ends of the umbilicus, *cornua*, horns, which were uſually carved, and adorned with ſilver, ivory, or even gold and precious ſtones: the title, *ſyllabos*, was ſtruck on the outſide; the whole volume, when extended, might make a yard and a half wide, and fifty long. The form which obtains among us is the ſquare, compoſed of ſeparate leaves; which was alſo known, though little uſed, by the ancients. To the form of books belongs alſo the internal œconomy, as the order and arrangement of points and letters into lines and pages, with margins and other appurtenants. This has undergone many varieties; at firſt the letters were only divided into lines, then into ſeparate words, which, by degrees, were noted with accents, and diſtributed, by points and ſtops, into periods, paragraphs, chapters, and other diviſions. In ſome countries, as among the Orientals, the lines began from the right, and ran towards the left; in others, as the northern and weſtern nations, from left to right; others, as the Greeks, followed both directions, alternately going in the one, and returning in the other, called *bouſtropheden*: in moſt countries the lines run from one ſide to the other: in ſome, particularly the Chineſe, from top to bottom. Again, in ſome the page is entire and uniform; in others, divided into columns; in others, diſtinguiſhed into text and notes, either marginal, or at the bottom; uſually it is furniſhed with ſignatures, and catch-words; ſometimes alſo with a regiſter, to diſcover whether the book is complete. To theſe are added the apparatus of ſummaries, or ſide-notes, the embelliſhments of red, gold, or initial letters, head-pieces, tail-pieces, effigies, ſchemes, maps, and the like. The end of the book, now denoted by FINIS, was anciently marked with this character <, called *cornis*.

BOOK-BINDING, the art of gathering and faſtening together the ſheets of a book, and covering it with a back. The ancient art of binding books, was not attended with great difficulties; for the leaves were only glued together, and rolled on round pieces or cylinders of wood, which manner of book-binding, whoſe invention is attributed to the Egyptians, was continued till long after the age of Auguſtus, and is ſtill retained by the Jewiſh ſynagogues, where they continue to write the books of the law on vellums ſewed together, making, as it were, only one long page, with two rollers, having claſps of gold or ſilver at their extremities, the whole book being wrapped up in a piece of ſilk, which ſerves as a cover to it. But, as this manner of binding books is attended with many inconveniencies, one of the Attali, kings of Pergamus, invented the form now in uſe, of ſquare binding, or of ſewing ſeveral quires, one over another, as more commodious to the reader, who can open and ſhut his book in an inſtant, without the leaſt difficulty, and without the leaves being expoſed to wear out ſo ſoon as when rolled up, eſpecially of books written or printed on paper.

The leaves are firſt folded with a thin piece of ivory called a folding-ſtick, and laid over each other in the order of the ſignatures; then beaten on a ſtone with a hammer to make them ſmooth and open well, and afterwards preſſed. They are then ſewed upon bands, which are pieces of cord or packthread, ſix bands to a folio book, five to a quarto, &c. which is done by drawing a thread through the middle of each ſheet, and giving it a turn round each band, beginning with the firſt, and proceeding to the laſt. After this the books are glued, and the bands opened and ſcraped for the better fixing the paſte-boards; the back is turned with a hammer, and the book fixed in a preſs between two boards, called backing boards, in order to make a groove for fixing the paſte-boards; which being applied, holes are made for fixing them to the book, which is preſſed a third time: then the book is put at laſt to the cutting-preſs, betwixt two boards, the one lying even with the preſs, for the knife to run upon; the other above it, for the knife to cut againſt; after which the paſte-boards are ſquared with a pair of ſhears. The next operation is ſprinkling the leaves of the book, which is done by dipping a bruſh made of hogs briſtles into vermillion and ſap-green, holding the bruſh in one hand, and ſpreading the hair with the other; by which motion the edges of the leaves are ſprinkled in a regular manner, without any ſpots being bigger than the others, at leaſt ſo far as to be diſagreeable to the eye.

Then remain the covers, which are generally either of calf-ſkin, or ſheep-ſkin. The beſt binding at preſent is in calf. The calf or ſheep-ſkin being moiſtened in water, is cut out to the ſize of the book with a knife, then ſmeared over with paſte, and afterwards ſtretched over the paſte-board on the outſide, and doubled over the edges within-ſide, after having firſt taken off the four angles, and indented and plated it at the head band; which done, the book is corded or bound firmly between two bands, with a kind of whip-cord, to make the cover ſtick the ſtronger to the paſte-board and the back, as alſo to form the bands or nerves more accurately; then ſet to dry, and, when dry, uncorded, and the leaves at each end opened. Afterwards, the book is waſhed over with a little paſte and water, and then ſprinkled fine with a bruſh, by ſtriking it either againſt the hand, or a ſtick, unleſs it ſhould be marbled; for then the ſpots are to be made larger, by mixing the ink with vitriol. Then the cover is glazed twice, with the white of an egg beaten, as painters do their pictures, when they are finiſhed, and at laſt poliſhed with a poliſhing iron paſſed hot over the glazed cover. Thus the binding of a book, properly ſo called, is finiſhed, unleſs it ſhould be lettered; for then a piece of red Morocco is paſted on the back, between the firſt and ſecond bands, to receive the title in gold letters, and ſometimes a ſecond betwixt the next bands underneath, to receive the number of the volume. In France, they ſeldom bind any book without both, if the work conſiſts of ſeveral volumes.

BOOK-KEEPING, commonly called merchants accounts, the method of recording the dealings and tranſactions of buſineſs in ſuch an exact and accurate manner, that the books of a merchant, factor, agent, &c. may at all times ſhew the juſt and true ſtate of all and every diſtinct part of his trading concerns. In keeping mercantile accounts by the method of double entry, three principal books are abſolutely neceſſary; the Waſte-book, the Journal, and the Ledger. Beſides theſe, ſeveral other auxiliary books are generally uſed in the counting-houſe; but theſe are more or leſs in number, according to the nature of the trade, and he is always reckoned the beſt accountant who makes uſe of the feweſt ſubſidiary books.

The Waſte-book is a complete memorial of all the tranſactions of buſineſs, recorded promiſcuouſly in the regular order of time as they happened, and according to their proper debtors and creditors. This, being the firſt and moſt eſſential book, cannot be kept with too much accuracy and regularity, becauſe it is always regarded as the principal voucher in all diſputes relating to trade.

This book opens with an inventory of a merchant's ready money and effects, the debts due to him, and what he owes to others; then follows a minute and accurate record of every tranſaction of his commerce, with all the neceſſary circumſtances of date, ſums, conditions, quantity, quality, price, and every other particular that may help to render the entries ſatisfactory and intelligible both to the preſent and all ſucceeding book-keepers.

The Waſte-book, commonly given in books of merchants accounts, is very different from the form of that book in real buſineſs, being only a plain narrative of the tranſactions of each particular day by way of memorandum, from whence the learner is to make out the Journal and Ledger entries.

The Journal, by way of preparatory to the Ledger, contains an abbreviation of the Waſte-book entries, in the ſame form and order of time, with only this difference, that the groſs, tare, and nett, of each particular caſk, bag, box, or other package, are expreſſed in full in the Waſte-book; whereas the nett, weight, and price, are ſufficient to be mentioned in a Journal poſt.

The Ledger is the principal book of accounts, wherein the ſeveral articles belonging to the ſame ſubject, are collected together, and ranged in their natural order of Dr. and Cr. on the oppoſite ſides of their reſpective accounts. When this book is duly poſted, the various tranſactions and dealings of a merchant, with reſpect to men, money, and merchandiſe, are ſo regulated and diſpoſed under their proper heads, that they afford a comprehenſive view of all his negotiations; from which a complete balance of his traffic being made, he may at any time ſee the true ſtate of each branch of his buſineſs, and know the amount of his preſent ſtock, or what he is worth at that time.

The uſe of the three principal books being deſcribed, we ſhall next proceed to the examination and uſe of the terms Debtor and Creditor.

As all tranſactions in trade are mutual between perſon and perſon, the records of commerce muſt conſiſt of two oppoſite parts, in order to be duly charged or debited on one ſide, and diſcharged or credited on the other, as the nature and reaſon of the events may require. —And as in all our dealings one man becomes indebted, or Dr. to another, for the value owing, and the other gives him credit, or is his Cr. for the ſame ſum due: ſo in trade, if all accounts of money, merchandiſe, and deſigns, be looked upon as accountable for their reſpective values, they muſt alſo be charged as indebted, or Drs. for the ſeveral ſums expended upon them, and be diſcharged or credited for whatever they repay or produce in return by ſale, &c.

Whence it is evident, as all accounts conſiſt of two oppoſite parts, the Dr. ſide on the left hand page of the Ledger, and Cr. on the right, the terms Dr. and Cr. always expreſs the relation between the two parts of each tranſaction, and ſhew to which ſide of their reſpective accounts in the Ledger they are to be carried.

The nature and uſe of the terms Dr. and Cr. being premiſed, it naturally follows to point out what is contained on the Dr. and Cr. ſides of each account.

All the tranſactions of trade may be reduced to theſe three branches. Firſt, Proper Trade, as it is carried on by the Merchant himſelf at home, with the aſſiſiſtance of his factors abroad. Secondly, Factorage, or the buſineſs he manages for another on commiſſion. Thirdyl, Partnerſhip, or Company Accounts, which are carried on either by one of the partners, or an indifferent perſon, as agent or truſtee, in the name and for the joint account of all the partners concerned.

Let the buſineſs of a merchant be ever ſo extenſive, all the diſtinct ſpecies of accounts that can poſſibly happen, are reducible to theſe four: Caſh, Merchandiſe, perſonal Accounts, and Deſigns.

The Caſh account contains, on the Dr. ſide, the ready money which the merchant had in hand when the account was opened, and all he has received ſince. The Cr. ſhews what has been given out in payments. And the difference between the ſides always falls on the Dr. ſide, agreeable to the account of caſh in hand; the Cr. ſide never can be the heavieſt, becauſe no one can pay away more than he had.

The account of goods, containing the prime coſt and charges, make the Dr. ſide: the quantity and value ſold or diſpoſed of, go to the Cr. ſide: the difference between the ſides ſhews the quantity of goods on hand, and the gain or loſs by what was delivered out.

In ſelling goods on commiſſion for another, the Cr. ſide of the account of ſales is the ſame with other accounts of your own goods; but the Dr. ſide contains only the freight, commiſſion, and other charges, without any mention of prime coſt or value; becauſe they are not your own property; and the difference between the Cr. ſide, or groſs ſales, and the charges and commiſſion on the ſales, is the nett proceeds of the ſales, and ſhews what is due from you to your employer, when you have received all the value ariſing from the ſale of his goods.

In all accounts of merchandiſe, the different kinds, quantities, and prices, ſhould always be diſtinguiſhed by inner columns in the Ledger, from which a merchant may at any time ſee the quantity, weight, &c. of what goods he has on hand, and know the ſtrength of his warehouſe, without the trouble of examining the contents.

The prime coſt or valuation, with all incidental charges of repairs, inſurance, or other expences laid out upon them, go to the Dr. ſides of the accounts of ſhips, houſes, and other poſſeſſions; the Cr. ſide contains the freight, rent, or other profits ariſing from them, while in poſſeſſion, and the amount of ſales when they are diſpoſed of; from which the true ſtate of all ſuch accounts may be eaſily known, as in accounts of goods.

The Perſonal Accounts contain on the Dr. ſide the debts due to you from the perſon whoſe name ſtands in the title of the account, whether for goods ſold, caſh lent, or received on your account, and the payments of your debts to him: the Cr. ſide is filled up with the debts you owe him, the payments of his debts to you, and the remittances he has made to you: when the difference falls on the Dr. ſide, it ſhews what is due by you to him; and when the Dr. ſide is heavieſt, the debt is due from him, or your money remaining in his hands.

Under this head are included all accounts current, and accounts of bills: and as theſe accounts are diſtinguiſhable only by ſome ſmall alteration in the words of their titles, it may not be improper to explain the difference between them.

Bills Receivable, are thoſe drafts which come into the hands of a merchant in the courſe of trade, and which he may either paſs off in making his payments, or keep them in his hand till they become due, and then receive the value from the perſon upon whom they were drawn: the Dr. ſide ſhews what bills you have received, and the Cr. how you have diſpoſed of them: the difference is the value ſtill in hand.

Bills Payable, are thoſe drafts which are drawn upon a merchant, and never come into his hands, but for acceptance, or after he has paid the value in caſh, or ſome other way ſatisfied the preſent poſſeſſor: the bills drawn upon you are to be placed to the Cr. ſide of this account, and the Dr. ſide ſhews how many you have diſcharged.

When you tranſact buſineſs for any one of your correſpondents, the particulars relating to ſuch accounts are to be entered in your Ledger, under the title of A. B. *His Account Current:* the ſame account in your correſpondent's Ledger is titled C. D. my account current, and in the foregoing caſe C. D. his account current.

In all your dealings with foreign-correſpondents, it is abſolutely neceſſary, that you keep the accounts in the money of both countries, the foreign money in the inner columns of the Ledger againſt its ſterling value in the money columns at the courſe of exchange then going. By this method you may always know the ſtate of your accounts with your foreign correſpondents, in the coin of both countries. When the foreign money is equal, the difference between the ſterling columns is your gain or loſs, by the exchange; if the ſterling money be equal, the difference between the inner columns is due to or from you, at the current rate of exchange: for as your correſpondent pays and receives only the ſpecies of his own country, when the account balances with him, you are not to expect any further remittance.

Deſigns, or fictitious accounts, comprehend all voyages and adventures, which contain on their Dr. ſide the prime coſt, charges, inſurance, &c. of cargo ſhipped. The Cr. ſide is filled with the diſpoſal of the goods, returns received from the factor, the ſum received or due from the inſurers for a total loſs, or in caſe of a partial loſs, with the value to be made good by the inſurers, and the value ſaved; the difference between the ſides is the gain or loſs made by the voyage or adventure, &c.

All intermediate accounts of pure diſburſements for which nothing comes in, or nett incomes for which no value goes out, ſuch as charges of merchandiſe, houſe expences, intereſt and diſcount, inſurance, gratuities, commiſſion, or any other accounts of gain or loſs, contain on the Dr. ſide the reſpective loſſes, and on the Cr. ſide the particulars gained.

To open the BOOKS.—The Waſte-Book and Journal are both ruled alike, with three columns for pounds, ſhillings, and pence, on the right hand ſide of the page; on the left is a margin for references to the folios of the Ledger, where the particular accounts then mentioned are to be found.

The Ledger is ruled on the left hand ſide of every page with a margin for the month, one column for the day, and another for the Journal page; and on the right, beſides the reference column to the Ledger folios and money columns, there muſt be inſide columns for the quantity and weight of goods, foreign money, &c. as the nature of the account requires.

Though the dates of the Waſte-Book and Journal entries might ſerve for references to each other; yet as the buſineſs of one day may ſometimes fill ſeveral pages in both, a reference in the Waſte-Book to the identical page of the Journal poſt, and from thence to the Ledger, will often ſave much time in examining the accounts: and for the more readily turning to any account in the Ledger, which you have occaſion to conſult, the titles of every account, with the number of the folio where they are ſtated, muſt be ſet down in an alphabet under the reſpective initial letters; obſerving to put the names of men under the letters of their ſurname, and adding their other names and place of abode for more particular diſtinction: becauſe you may, perhaps, have dealings with ſeveral of the ſame name, though not of the ſame place.

When the books are thus prepared, the firſt thing to be done, before you enter into trade, is to write an inventory, either in the firſt page of the Waſte-Book, or, as is more common with merchants, on a looſe ſheet of paper, of all the ready money and merchandiſe by you, debts owing to you, voyages, adventures, ſhips, houſes, and all other effects belonging to you: enter theſe ſeveral perſons and parcels, Drs. to your ſtock or general capital, which is uſed inſtead of your own name: and for the debts owing by you, write ſtock Dr. to thoſe ſeveral perſons to whom you are indebted.

Then turning to the Journal, make the ſeveral articles which were particularly expreſſed in the Waſte-Book, Drs. to ſtock, in one line, writing thus:

Sundry Accounts to Stock - . Drs.

For the amount of money and effects per Waſte-book. - - - - - £.

Stock to ſundry Accounts - - Dr.

For which I am indebted to ſundry perſons. - - - - - - - - - £.

And having placed the ſame folio figures on each oppoſite page of the Ledger; becauſe each account conſiſts of two oppoſite parts; write on the top of the left-hand page, in a good round text hand, Stock———Dr; and below, placing the month in the margin, the day in the next column, and the Journal folio in the other, write either *To ſundry Accounts*, expreſſing the whole value in one ſum, or *To the ſeveral Particulars*, as in the Waſte-Book, putting the Ledger folios where thoſe Accounts are opened, and the reſpective ſums againſt each.

On the right-hand page, write Contra------Cr. and in the line below, *By ſundry Accounts*, for the whole value, or *By each Particular*, with its ſum; obſerving the date and folios as on the Dr. ſide.

Then beginning with caſh, enter into the title Caſh-----Dr.------Contra.------Cr. as you did for ſtock; and beneath in ſmall hand, on the Dr. ſide, after the date and Journal folio, write, *To Stock for ſo much ready Money*, expreſſing the ſum and Ledger folio, where the account of ſtock is opened.

When all the accounts in the inventory are erected, and charged according to their reſpective debts or credits, the books are then ſaid to be opened, and the merchant may proceed to record the particular tranſactions of real buſineſs.

In poſting from the Waſte-Book to the Journal, and from that to the Ledger, it is common to make a daſh, or ſome other mark at the pleaſure of the book-keeper, in the margin againſt the accounts, to ſhew that they are entered into the other books. This is called *Pricking off the Accounts*.

To poſt or make Entries.---Every entry which is made in the Waſte-Book, ought to conſiſt of all, or as many of the following parts as the circumſtances of the tranſaction will admit.

1. The date in the middle of the page, with lines drawn each way to the columns.

2. The debtor or account to be charged, and creditor or account which is diſcharged, written in a large hand, with Dr. at the end of the ſame line.

3. The reaſon why ſuch a perſon, account or deſign, is made Dr. with the particular conditions of the negotiation.

4. The mark, weight, meaſure, &c. of each particular parcel or package, which is received in or delivered out at the price agreed upon.

5. The total ſum in the money columns.

In other entries where there are ſundry debtors to one creditor, or ſeveral creditors and only one debtor, the ſeveral debtors or creditors are entered in the firſt line after the date, under the title of *Sundries*, or *Sundry Accounts*, and each particular Dr. or Cr. afterwards expreſſed below with their reſpective ſums ſhort carried.

To an expert book-keeper, a Waſte-Book without a Journal, or a Journal without a Waſte-Book, would be ſufficient; but as he may not always be in the way, or ſometimes in the hurry of buſineſs be obliged to make entries in haſte; this makes it neceſſary to keep a Waſte-Book, from which at leiſure hours the entries may be more correctly and fairly journalized by one hand: for the Journal ſhould be written by one perſon, and we will recommend it to all book-keepers to keep the Journal and Ledger always cloſe poſted up with the Waſte-Book.

The Journal entries are no more than a fair copy of the Drs. and Crs. in the Waſte-Book, exactly in the ſame form and words. But the conditions, nett weight, total amount, &c. are expreſſed below in more conciſe and general terms.

As the Waſte-Book entries are transferred into the Journal, ſo are theſe in the Journal poſted into the Ledger, under the reſpective heads; but as all the titles of accounts in the Ledger conſiſts of a Dr. part on the left-hand page, and its counter-part Cr. on the oppoſite page; ſo every entry into this book muſt be placed under two or more different heads, according to the circumſtance of each tranſaction.

For your government in making Waſte-Book and Journal entries, and poſting them into the Ledger, remember the following precepts.

1. In every account there muſt be a debit and a credit part; ſo that whenever you make an entry on the Dr. ſide of any account in the Ledger, you muſt alſo have an equivalent credit of the ſame date under ſome other title. And in thoſe Journal entries, where ſundry accounts are charged Drs. or Crs. the ſeveral debtors and one creditor, or the ſingle debit and ſeveral credits, muſt always be equal; or whatever value you place to the debit of one or ſeveral accounts, juſt ſo much muſt be entered on the Cr. ſide of ſome other account or accounts, before your entry be duly poſted into the Ledger.

2. The receiver is debtor; the deliverer is the creditor. But as the merchant is never to be made a Dr. or Cr. in his own books, whenever he receives or delivers out any thing; then the merchandiſe or money which comes into his hands is the debtor, and whenever he delivers out is the creditor.

The account or deſign which is by any means increaſed or benefited, or on account of which any thing goes out, either from yourſelf or from any of your correſpondents for your account, is to be charged Dr. for the total amount. That account or deſign which decreaſes, ſuffers loſs, or from whence any thing is produced or comes into your own hands, or into the hands of any one employed for your account, is to be credited or diſcharged from the value.

To correct errors.—The common method of diſcovering errors, and proving the truth of the poſting, is to make a trial-balance: this is done by adding up all the ſums on the Dr. ſide of the Ledger into one total, and all the ſums on the Cr. ſide into another; when theſe ſums total agree, the poſting is concluded to be juſt.

But as errors in poſting may be committed many different ways, which will not effect the trial-balance, the only means to be certain that no ſuch neglect or miſtake has been committed, is to prick off all the entries, as well in the Waſte-Book and Journal, as in the Ledger: and as it is inconſiſtent with the honourable character of a merchant and fair trader to ſuffer any blotting out or eraſement in his books, when any errors are diſcovered, the book-keeper muſt always acknowledge ſuch miſkakes in plain words in the ſame book where they are found, and place an aſteriſk againſt the erroneous entry and its correction, when he writes them off the Ledger.

Subſidiary BOOKS.—Beſides the three principal books already deſcribed, thoſe merchants who are largely concerned in trade, find it neceſſary to make uſe of ſeveral other ſubſidiary books, which are chiefly deſigned to eaſe the Caſh-Book, and ſome of the accounts in the Ledger, or to contain the particulars of thoſe kinds of articles, which, though they are neceſſary to be preſerved for the ſake of reference, would take up too much room in the Waſte-Book or Journal.

The following deſcriptions are ranged agreeable to the order of time uſually obſerved in counting-houſes, for admitting young clerks to write in each book.

1. *The Letter* BOOK. To keep copies of all the letters of buſineſs which a merchant writes to his correſpondents, may ſometimes prove of the utmoſt importance to his commercial affairs; for as diſputes very often ariſe from orders or advice being ill expreſſed, wrong underſtood, or badly executed, by having recourſe to the letter-book, he may know exactly what was written on any particular occaſion, in what terms and with what limitations an order was given, or what kind of advice had been ſent to any of his correſpondents; he will alſo be enabled to furniſh a true copy of the original which has been loſt or miſlaid.

As no other qualifications but reading and writing are requiſite in copying letters, this is the employment of every young clerk at his firſt admiſſion into the counting-houſe: but, to prevent any omiſſions or alterations, the copy ſhould always be read over, and carefully compared with the original, before it be ſent away.

2. *The Ship's* BOOK.—Thoſe who have the direction of fitting out ſhips, commonly keep the accouunt for each ſhip in a ſeparate book, which takes its title from the name of the ſhip, as the *Elizabeth's Book*, the *Tyger's Book*, *&c.*

When ſeveral merchants have ſhares of the ſame ſhip, one of the partners being appointed by the reſt to keep the accounts, and have the management of her out-fit, is called the *Ship's Huſband.*

A ſhip's book ſhould contain the invoice of the cargo; the captain's orders; an account of the diſburſements or charges attending the fitting out, and purchaſe, if it be her firſt voyage for that ownery; a liſt of tradeſmen's bills for the cargo, out-fit and victualling; the names, ſtations, wages, &c. of the ſeveral perſons on board; and the diviſion of the whole among the owners, if more than one, according to their reſpective ſhares. This part is drawn out by the ſhip's huſband, immediately after the ſhip ſails, and ſent to the other parties to be copied. When the ſhip returns from her voyage, the invoice of returns, and if they are not put into the broker's hands to be ſold, their diviſion among the owners, the factor's account of ſales, and account current, are added to it, and copied by the ſeveral parties as before.

3. *The Receipt* BOOK—The moſt common form of this book is quarto, opening the long way, and contains receipts for all the payments a merchant makes, inſtead of having them upon looſe papers, or under the bills of parcels, &c. each receipt being numbered in the margin may ſerve for references, and the ſums may be placed in money columns on the other ſide.

A receipt, being a note of acknowledgement given by the receiver of a ſum of money to diſcharge the payer from his obligation, ſhould have only the date expreſſed in figures; the perſon from whom, and on whoſe account it was received; the ſum received; the reaſon for ſuch payment in full or in part, whether on his own or another's account, ſhould all be ſpecified in words at length, and muſt be ſigned below by the receiver.

4. *The Bill* BOOK.—To be regular in buſineſs, and punctual to engagements, is the grand ſupport of all commercial honour and credit; and when a merchant knows what bills he has by him, and when they will become due, what bills he has drawn upon his correſpondents, and what they have drawn upon him, common prudence will dictate ſuch means of maintaining his reputation as are agreeable to the cuſtoms of merchants, and the laws of exchange.

The bill-book is deſigned to ſupply this part of neceſſary information, and in ſome counting-houſes contains exact copies of all the bills which are drawn by or paſs through the hands of the merchant, with the indorſers written in the margin on one ſide, and the perſon's name to whom they are paſſed on the other.

5. *The Invoice* BOOK.—This book contains copies of all the invoices of goods which a merchant ſhips off to ſea, or receives from abroad, either on his own private account, in partnerſhip, or for others in commiſſion. And to render the invoices eaſier to be found, the invoice-book ſhould be paged, and have an alphabet at one end.

The title of every invoice ſhould declare the name of the ſhip wherein the goods are ſhipped, the maſter's name, the merchant to whom and on whoſe account they were ſhipped, with their reſpective places of reſidence.

Then ſhould follow a minute detail of all the different kinds, quantities, and qualities, of the merchandiſe ſhipped, with the particular circumſtances relating to their mark, number, package, price, &c.

Below this muſt be annexed on account of the freight, cuſtom, charges, brokerage, commiſſion, &c. attending the purchaſe

chaſe or ſhipping, which being ſhort-carried muſt be brought into the money columns in one ſum, and being added to the value of the merchandiſe above, gives the amount of the invoice in the money of that country where the goods were ſhipped.

And, to complete the whole in the common mercantile form of cloſing all invoices, accounts current, accounts of ſales, &c. at the foot of the invoice write, *Errors excepted*, to ſignify that if any errors or omiſſions have paſſed unobſerved, they are no more than overſights, and not intended to the prejudice of either party. Immediately after this muſt be written the place and date of drawing the account; and in the next line below it muſt be ſigned by the perſon who ſhipped the goods.

6. *The Sales* BOOK.---This book contains a collection of the ſeveral ſales of merchandiſe which have been made either by you for your employers, or on your account by your correſpondents at other markets.

An account of ſales is the account given by one merchant to another, or by a factor to his principal, of the diſpoſal, charges, commiſſion, and nett proceeds of certain merchandiſe ſent for the proper or company accounts of him who conſigned the ſame to ſuch factor or vender, and is always made out in the current money of that country wherein the buſineſs is tranſacted.

There are ſeveral methods of drawing up accounts of ſales; the firſt is to collect all the goods of the ſame kind, and place them together in the ſame order as they were ſold, with their prices and values ſhort-carried; then add up the quantities to be compared with the invoice, and carry the amount into the money columns; when you have gone through all the particulars, place the charges below, which being deducted from the amount of the ſale, leaves the nett proceeds.

7. *The* BOOK *of Accounts Current*.---This book is kept in the Ledger form of Dr. and Cr. and contains copies of all the accounts current, which are drawn up to be ſent to correſpondents, in order to have them ſettled in concert before they are cloſed in the Ledger.

If thoſe merchants who tranſact buſineſs by commiſſion for others, would always take care to tender an account current to be examined and paſſed by their employer as ſoon as his affairs are finiſhed, it would certainly be the moſt effectual means of preventing thoſe differences and diſputes in trade, which ſo often ariſe from accounts ſtanding open too long, and might have been eaſily adjuſted while the particular circumſtances were freſh in the memories of both parties.

8. *The Warehouſe* BOOK.---The uſe of this book is to keep memorandums of the marks, numbers, package, quantity, quality, &c. of all the merchandiſes which are from time to time received into or delivered out of a merchant's warehouſe: together with the names of thoſe from whom they are received, and to whom they are delivered, and all other particular conditions neceſſary to be mentioned in the Waſte-Book entry.

Some merchants keep their warehouſe-book on the two oppoſite pages in the Ledger form: the left-hand page containing the marks, numbers, weight, &c. of the goods taken into the warehouſe; and on the right hand page they follow the ſame method for thoſe which are ſent out; but if the quanties of goods be kept in the inner columns of the Ledger, the ſtock of merchandiſe on hand may be much eaſier known, and this method of keeping the warehouſe-book will be entirely ſuperſeded.

9. *The* BOOK *of Expences*. The particulars of all the different charges and expences on trade, ſuch as carriage, duties, freight, wharfage, porterage, houſe-expences, poſtage of letters, rents, &c. may either be kept on different pages of the ſame book, or in as many ſeparate books as the merchant finds convenient for his buſineſs.

The firſt commiſſion conferred on a young clerk in the counting-houſe is keeping the petty caſh: in this office he is appointed to pay and keep the account of all incident petty expences and commerce.

It may not be improper for thoſe who tranſact buſineſs on commiſſion for others, to keep ſeparate accounts of the expences attending each employers affairs, from which they may at any time eaſily furniſh a copy of the particulars when requeſted, or carry the amount to their reſpective accounts when they are ſent in.

The model of this book is very eaſily conceived; and all that is neceſſary to be obſerved in keeping it is, that the caſh paid out in expences on the houſhold or commercial affairs, muſt be carefully entered under the reſpective title of the account for which it was paid, and then once a week or month be caſt up, and the ſum total transferred to the Waſte-Book.

10. *The Caſh*-BOOK.—The caſh-book, or caſh-ledger, is the moſt important of all the ſubſidiary books. It is kept in the Ledger form, and contains on the Dr. ſide all the particular ſums of money which

are daily received and the ſeveral ſums delivered out in payments, are entered on the Cr. ſide, references from each entry to the correſponding accounts in the Ledger.

From keeping the petty caſh, the young clerk is promoted to the care of the general caſh; and then he is ſtiled the caſhier, or caſh-keeper: and as the caſh-keeper is liable to make good all deficiencies in the caſh, it is his buſineſs only to keep the caſh-book; which for his own ſatisfaction ſhould often be examined how it agrees with the caſh in hand, and once a week, or month, as it is found moſt convenient, muſt be transferred to the Ledger.

BOOK-SELLER, a perſon who trades in books, whether he prints them himſelf, or gives them to be printed by others.

BOOM, in marine fortification, a ſtrong chain, on which are faſtened a number of yards, poles, &c. extended acroſs the mouth of a harbour to prevent the entrance of enemies ſhips.

BOOMS, in naval affairs, long poles to extend the bottom of certain ſails; of theſe there are ſeveral kinds, as ſtudding-ſail-booms, jib-boom, ſquare-ſail-boom, and main-boom; the two laſt, however, are only uſed in ſmall veſſels. This is likewiſe a general name for all maſts and yards.

BOOT, a well-known cover for the leg, made of leather; chiefly uſed in riding.

BOOT-TREE, or BOOT-LAST, an inſtrument uſed by ſhoe-makers to widen the leg of a boot. It is a wooden cylinder ſlit into two parts, between which, when it is put into the boot, they drive by main force a wedge or quoin.

BOOT-TOPPING, in naval affairs, when a ſhip, either from the hurry of her voyage, or the want of a convenient ſituation, cannot get her bottom cleaned of the filth that gathers to it at ſea; it is uſual to make her heel, or incline firſt to one ſide and then to the other, as much as they may do it without Danger of overturning her; and having ſcrubbed off the ooze, ſhells, and other excrement, with bruſhes and brooms, they cover it with a mixture of tallow, ſulphur, &c. and this is called giving her boot-tops. See CAREEN, DOCK, &c.

BOOTES, a conſtellation of the northern hemiſphere, conſiſting of twenty-three ſtars, according to Ptolemy's catalogue; of twenty-eight, in Tycho's; of thirty-four in Bayer's; of fifty-two in Hevelius's; and of fifty-five in Mr. Flamſtead's.

BOOTY, what is taken from an enemy in time of war.

Among the Greeks, the booty was divided equally, a ſhare being reſerved for their gods. By the military diſcipline of the Romans, the booty belonged to the Republic, and the generals ordered it all to be carried to the public treaſury. Sometimes, indeed, it was diſtributed among the ſoldiers, as a reward of their bravery, and in order to animate them in future actions.

BORAGO, Borage, a very hairy rough plant, with wrinkled blackiſh green leaves approaching to an oval ſhape, and round hollow ſtalks on which the leaves are ſet alternately; on the tops of the branches come forth blue, ſometimes reddiſh or whitiſh, monopetalous flowers, each of which is divided into five ſharp pointed ſegments, and followed by four wrinkled blackiſh ſeeds, lying naked in the enlarged cup. It is annual, and grows wild on waſte grounds, and on old walls.

The aparient and refrigerating virtues aſcribed to borage leaves are not wholly without foundation; though theſe virtues are undoubtedly very weak.

The flowers of the plant have been principally made uſe of, and are generally ranked among cordials, though they ſeem but little entitled to that diſtinction.

BORAX, a ſaline ſubſtance, of which neither the origin, or the component parts are yet known. It comes from the Eaſt-Indies, in little cryſtalline maſſes.

The properties of borax, ſo far as they are known, are theſe: It is of a bright ſnowy whiteneſs, extremely light, compoſed of fine plates or ſcales; ſoft, and as it were unctuous to the touch, of no ſmell, of a bitteriſh taſte, accompanied with a ſlight impreſſion of coldneſs. It diſſolves with difficulty in boiling water, and on the liquor's cooling, cryſtallizes on its ſurface into thin plates, which uniting and becoming larger, fall to the bottom. It is obſervable, that borax, during its diſſolution, appears tenacious, and adheres in part to the bottom of the veſſel: from this glutinous quality, peculiar to borax, among the ſalts, it is employed by the dyers for giving a gloſs to the ſilks. It is alſo of the greateſt uſe in ſoldering metals. See SOLDERING.

BORDAT, in commerce, a ſmall narrow ſtuff, manufactured in ſome parts of Egypt, particularly at Cairo, Alexandria, and Damieta.

BORDERS, in gardening, are of four ſorts: thoſe are the moſt common that are continued about parterres without any interruption, and wrought with a gentle riſing in the middle, like an aſs's back, and planted with low ſhrubs and flowers. The ſecond ſort of borders are ſuch as are cut into compartments, at convenient diſtances, by ſmall paſſages, and being alſo raiſed in the middle, as before mentioned, are likewiſe ſet off with ſhrubs. The third ſort are ſuch as are laid even and flat, without flowers, having only a verge of graſs in the middle, being edged with two ſmall paths, raked ſmooth and ſanded. Theſe are ſometimes garniſhed with flowering ſhrubs, and flowers of large growth; or with vaſes and flower-pots placed regularly along the middle of the verge of graſs.

The fourth ſort are quite plain, and are only ſanded, as in the parterres of orangery: and are filled with caſes ranged in a regular order along thoſe borders, which are edged with box on the ſides next the walks: and on the other, with verges and graſs-work next the parterre. Sometimes a yew is planted between each caſe, which makes the border appear richer, and the parterres handſomer, during the winter ſeaſon. As the modern taſte of parterres, and fret-work in box, has been juſtly baniſhed from our gardens, ſo I have only mentioned them here, to expoſe the taſte of thoſe architect-gardeners, who have no idea of the noble ſimplicity of an open lawn of graſs, properly bounded by plantations: but inſtead of this, divide that part of the garden, near the houſe, into various forms of borders edged with box, and ſand or gravel-walks leading about them; by which the ground is cut into many angles, ſcrolls, &c. which is very hurtful to the eye of a judicious perſon; therefore, where flowers are deſired, there may be borders continued round the extent of the lawn, immediately before the plantations of ſhrubs; which, if properly planted with hardy flowers to ſucceed each other, will afford a much more pleaſing proſpect than the ſtiff borders made in ſcrolls and compartments, after the French manner, can poſſibly do. Theſe borders may be made ſix or eight feet wide, in proportion to the extent of the garden, and ſize of the lawn; for a ſmall lawn ſhould not have very broad borders; nor ought a large lawn to be bounded by ſmall borders; ſo that a due proportion ſhould be always obſerved in the laying out of gardens. *Miller's Gardener's Dictionary.*

BORD-LANDS, the demeſnes which lords keep in their hands for the maintenance of their board or table.

BORD-SERVICE, the tenure of bord-lands, by which ſome lands in certain places are held of the biſhop of London, and the tenants now pay ſix-pence per acre, in lieu of finding proviſion as anciently for their lord's table.

BORDURE, in heraldry, a cutting off from within the eſcutcheon all round it, about one fifth of the field, ſerving as a difference in a coat of arms, to diſtinguiſh families of the ſame name, or perſons bearing the ſame coat. If the line, conſtituting the bordure, be ſtraight, and the bordure be plain, then in blazoning you muſt only name the colour of the bordure.

Bordures are ſymbols of protection, favour and reward, and as ſuch, kings beſtow them on thoſe they have a value for.

BORE, among engineers, the diameter of the barrel of a gun, or cannon, or rather its whole cavity.

Aurora BOREALIS, See AURORA.

BOREAS, a Greek name, now in common uſe for the north wind. Pezron obſerves, that anciently Boreas ſignified the north-eaſt-wind, blowing at the time of the ſummer ſolſtice. Boreas is repreſented, in painting, like an an old man with a horrible look, his hair, and beard covered with ſnow or hoar froſt, with the feet and tail of a ſerpent.

* BORGIA (CÆSAR) the natural ſon of Roderic Borgia, afterwards pope, by the name of Alexander VI. He was proſecuting his ſtudies at Piſa, when his father was raiſed to the papacy, in 1492, upon which he took a journey to Rome, where he was ſoon after made archbiſhop of Valenza, and cardinal of St. Maria Nuova. The reſt of his life was a continued ſcene of the blackeſt and moſt horrid villainies. After committing a great number of aſſaſſinations, he reſigned his cardinalſhip, and went ambaſſador to France, where he was made duke of Valentinois, by Lewis XII. and poiſoned the biſhop of Setta, the pope's nuncio, at Paris. He married Mademoiſelle d'Albret, daughter of the king of Navarre. He now grew every day more and more bloody in his diſpoſition; Rome and the Eccleſiaſtical dominions were full of aſſaſſinations. Every thing of which the clergy were poſſeſſed, was, upon their deceaſe, claimed by the pope as his property; and the ſums ariſing from the benefices, while vacant, were likewiſe ſecured; and the benefices themſelves ſold like common goods in a market. In this manner were the Borgias heaping up wealth, when an unforeſeen accident blaſted all their projects. Borgia and his father the pope propoſing to make themſelves maſters of Tuſcany determined to raiſe money by the

promotion of new cardinals; upon which they choſe nine of the richeſt of the prelates, whom they reſolved to diſpatch by poiſon immediately after their promotion, together with ſome others of the moſt wealthy at Rome. For this purpoſe they invited the new cardinals to ſup at a vineyard near the Vatican, belonging to cardinal Adriano di Corneto, who, as he was extremely rich, was, among the reſt, ſingled out to die by the ſame poiſon. Borgia, in order to execute this deſign, ſent to the pope's butler, who was to ſerve at ſupper, ſome particular flaſks of wine which he had mixed with poiſon, and gave the butler a ſtrict charge that none ſhould taſte of it but thoſe whom he ſhould particularly direct. The pope and he, about the cool of the evening, came to the vineyard where they were to ſup, when the former, before he ſat down to ſupper, deſired ſomething to drink; the chief butler, who had received Borgia's directions about the poiſon, being gone to the Vatican to fetch a ſalver of peaches for the deſart, the under butler went to the ſide-board, and finding ſix flaſks laid by in a corner, imagined that they might contain wine of a better kind than the reſt, and therefore poured out a glaſs-full of the poiſoned liquor, which he delivered to the cup-bearer, who gave it to the pope, who inſtantly drank it off. Borgia likewiſe drank another glaſs of it. As ſoon as the pope ſat down to ſupper, the poiſon began to work ſo in his bowels, that he fell ſuddenly off his chair, and was taken up for dead. Nor did Borgia eſcape the effect of his own plot; he was ſeized with exquiſite pain. As ſoon as the pope was taken from the ground, they cauſed him to be carried in all haſte to the Vatican, and Cæſar Borgia to his chamber likewiſe, and from that moment they never ſaw each other again; remedies were in vain uſed for the pope's recovery, he was filled with inexpreſſible agony, and the next day died, the 18th of Auguſt, 1503. But Cæſar Borgia, by the ſtrength of his conſtitution, overcame the poiſon. After this Borgia narrowly eſcaped being maſſacred by his enemies; he was confined in priſon; he made his eſcape; was obliged to fly for ſafety from place to place, and at laſt entering a volunteer into the army of his brother in-law, John, king of Navarre, this execrable monſter was killed fighting under the walls of Viana, March 12, 1507.

BORING, the art of perforating or making a hole through any ſolid body,

BORING *of Water-pipes*. See PIPES.

BORING, in farriery, an operation in uſe for the cure of wrenched ſhoulders in horſes. Having cut a hole in the ſkin, over the part affected, they blow it up with a tobacco pipe, as a butcher does a ſhoulder of veal; after which they thruſt a cold flat iron, like the point of a ſword blade, eight or ten inches up between the ſhoulder blade and the ribs: this they call boring.

BORING, in mineralogy, a method of piercing the earth with ſcooping irons, which, being drawn back at proper times, bring up with them ſamples of the different ſtrata through which they have paſſed; by the examination of which they will be able to gueſs whereabouts a vein of ore may lie.

BOROUGH, BURROUGH, BOROW, or BURGH, a corporation, or town, which is not a city. The word originally meant a company, conſiſting of ten families which were bound together as each other's pledge. Afterwards borough came to ſignify a town having a wall or ſome kind of encloſure round it: and all places that in old time had the name of borough, it is ſaid, were fortified or fenced in ſome ſhape or other. Borough is a place of ſafety and privilege: and ſome are called free burghs, and the tradeſmen in them free burgeſſes, from a freedom they had granted to them originally, to buy and ſell without diſturbance, and exempt from toll.

BOROUGH is now appropriated to ſuch towns or villages as ſend repreſentatives to parliament, whether incorporated or not. They are diſtinguiſhed into thoſe by charter or ſtatute, and thoſe by preſcription or cuſtom: the number in England is 149, ſome of which ſend one, but the moſt of them two repreſentatives.

Royal BOROUGHS, in Scotland, corporations made for the advantage of trade, by Charters granted by ſeveral of their kings, having the privilege of ſending commiſſioners to repreſent them in parliament, beſides other peculiar immunities. They form a body of themſelves, and ſend commiſſioners each to an annual convention at Edinburgh, to conſult the benefit of trade, and their general intereſt.

BOROUGH-HEAD, or HEAD-BOROUGH, called alſo borough-holder, or burſholder, the chief man of the decenna, or hundred, choſen to ſpeak and act in behalf of the reſt. Headborough alſo ſignifies a kind of head conſtable, where there are ſeveral choſen as his aſſiſtants, to ſerve warrants, &c. See CONSTABLE.

BOS, the ox, in zoology, a genus of quadrupeds, of the order of the pecora, the characters of which are, that the horns are hollow and turned forward, bent like creſcents, and ſmooth on the ſurface.

Of this genus, authors enumerate the five following ſpecies, viz. 1. The common tame kind. 2. The bonaſus. 3. The biſon. 4. The bubalus. 5. The urus. See the articles Bonasus, Bison, &c.

* **BOSCAWEN (EDWARD)** a diſtinguiſhed admiral, was the ſecond ſon of Hugh, late lord viſcount Falmouth, and having early entered into the navy, was, in 1740, appointed captain of the Shoreham, and behaved with great intrepidity as a volunteer under admiral Vernon, at the taking of Porto Bello. At the ſiege of Carthagena, in March 1740-1, he had the command of a party of ſeamen, who reſolutely attacked and took a battery of fifteen twenty-four pounders, though expoſed to the fire of another fort of five guns. Lord Aubrey Beauclerk being killed on the 24th of March, at the attack of Boca-Chica, captain Boſcawen ſucceeded him in the command of the Prince Frederick of ſeventy guns. On the 14th of May, 1742, he returned to England, and married Frances, daughter of William Glanville, eſq. and was elected repreſentative in parliament for Truro, in Cornwall. In 1744, he was made captain of the Dreadnought of ſixty guns, and ſoon after took the Medea, a French man of war. On the 3d of May, 1747, he ſignalized himſelf under the admirals Anſon and Warren, in an engagement with the French fleet, off Cape Fineſterre, and was wounded in the ſhoulder with a muſquet ball. On the 15th of July, he was appointed rear-admiral of the blue, and commander in chief on an expedition to the Eaſt Indies; and on the 4th of November ſailed from St. Helen's, with ſix ſhips of the line, five frigates, and two thouſand ſoldiers. On the 29th of July, 1748, he arrived at St. David's, and ſoon after laid ſiege to Pondicherry; but the men growing ſickly, and the monſoons being expected, the ſiege was raiſed. Soon after he had news of the peace, and Madraſs was delivered up to him by the French. In his abſence he had been appointed rear-admiral of the white. He was the next year made one of the lords commiſſioners of the admiralty, and choſen an elder brother of the Trinity-houſe. On the 4th of February, 1755, he was appointed vice-admiral of the blue, and on the 19th of April, ſailing in order to intercept a French ſquadron bound to North America, fell in with the Alcide and Lys, of ſixty-four guns each, which were both taken. In 1756, he was appointed vice-admiral of the white, and in 1758, admiral of the blue, and commander in chief of the expedition to Cape Breton, when, in conjunction with general Amherſt, and a body of brave troops from New-England, the important fortreſs of Louiſbourg, and the whole iſland of Cape Breton, was taken, for which he afterwards received the thanks of the houſe of commons. In 1759, being appointed to command in the Mediterranean, he arrived at Gibraltar, where hearing that the Toulon fleet, under M. de la Clue, had paſſed the Streights, in order to join that at Breſt, he got under ſail, and on the 18th of Auguſt ſaw, purſued, and engaged the enemy. His ſhip, the Namur, loſing her main-maſt, he ſhifted his flag to the Newark, and after a ſharp engagement, took three large ſhips, and burnt two in Lagos Bay, and the ſame year arrived at Spithead with his prizes, and two thouſand priſoners. On December 8, 1760, he was appointed general of the marines, with a ſalary of 3000l. per annum, and was alſo ſworn one of the privy council. This brave admiral died the 10th of June, 1761.

BOSQUETS, are groves of ſhrubs, or tall large-growing plants, planted in quarters. Theſe quarters are commonly ſurrounded with ever-green hedges, and the entrances formed into regular porticoes with yews, which are by far the beſt and moſt proper trees for this purpoſe.

They may be alſo ſurrounded with hedges of lime, elm, horn-beam, or beech; which ſhould be kept well ſheared, and not ſuffer to riſe too high, that the heads of the trees may be fully ſeen over them, and the ſtems only hid from the ſight, when in the walks on the outſide of the quarters. In planting of theſe boſquets, you ſhould obſerve to mix the trees which produce their leaves of different ſhapes, and various ſhades of green, and hoary or mealy leaves, ſo as to afford an agreeable proſpect; beſides, there is a great variety of different fruits, which theſe trees produce in autumn; which, although of little or no uſe that we know of, yet have a very good effect, in affording an agreeable variety for ſome time after the leaves are gone; as the euonymus, or ſpindle-tree, the opulus, or marſh-elder, the cock-ſpur-hawthorn, with many other ſorts, too numerous to mention in this place. But I would adviſe never to mix ever-greens with deciduous trees; for, beſides the ill effect it hath to the ſight, eſpecially in winter, they ſeldom thrive well together; ſo that thoſe quarters where you intend to have ever-greens, ſhould be wholly planted therewith. Theſe boſquets are proper only for ſpacious gardens, being expenſive in their firſt making, as alſo in keeping. *Miller's Gardener's Dictionary.*

BOSSAGE, in architecture, a term uſed for any ſtone that has a projecture, and is laid rough in a building, to be afterwards carved into mouldings, capitals, coats of arms, &c.

BOSSAGE, that which is otherwiſe called ruſtic work, and conſiſts of ſtones which advance beyond the naked, or level, of the building, by reaſon of indentures or channels left in the joinings. Theſe are chiefly uſed in the corners of edifices, and thence called ruſtic quoins. The cavities or indentures are ſometimes round, ſometimes chain-framed, or bevelled, ſometimes in a diamond form, and ſometimes included with a cavetto, and ſometimes with a liſtel.

* BOSTON, a town of Lincolnſhire, it has two markets, one on Wedneſdays, and the other on Saturdays, and alſo three fairs; that on May 4 is chiefly for ſheep; that on Auguſt 11 is called Town Fair, and that on December 11 is for horſes. It ſends two members to parliament, and is a large, neat, and well inhabited town, ſeated on both ſides the river Witham. It has an handſome market-place, and a church, reckoned the largeſt pariſh church, without croſs iſles, in Europe, and its ſteeple ſerves as a land-mark for ſailors. Boſton is governed by a mayor, who is clerk of the market and admiral of the coaſt, a recorder and his deputy, twelve aldermen, eighteen common council men, a judge, and marſhal of the admiralty, a town-clerk, a coroner, and two ſerjeants at mace. It is one hundred and twenty north of London. Long. 0. 15. E. Lat. 53. 3. N.

* BOSTON, the capital town of New England, in North America, it was built in 1630, in a peninſula about four miles in circumference, at the bottom of Maſſachuſet's Bay. On the ſouth ſide are ſeveral rocks, which break the waves at the entrance of the bay; and on the north ſide there are about a dozen ſmall iſlands, called the Brewſters, ſome of which are inhabited. The entrance would be difficult, but for marks ſet up for a guide; but within the harbour there is room enough for five hundred ſhips to lie at anchor. In one of the above mentioned iſlands there is a caſtle regularly fortified, called Fort William, which ſtands well to guard the entrance. There are one hundred pieces of cannon, placed on a platform near high water mark, ſome of which are forty-pounders. The bay is ſo much frequented, that there are twenty-four thouſand ton of ſhipping cleared annually. Ships may unlade here without the help of lighters and boats. The ſtreets are handſome, and the chief runs from the pier to the Town-houſe or Exchange, which contains the merchant's walk, the council chamber, the houſe of the repreſentatives, and a large room for courts of juſtice. It is ſurrounded with bookſellers ſhops, among which are five printing-houſes. The town lies in the ſhape of a half-moon round the harbour, and contains about four thouſand five hundred houſes, and twenty-four thouſand inhabitants. As it ſtands upon land that riſes gradually, it affords a delightful proſpect into the ſea. It is two miles in length, and in ſome places three quarters of a mile broad. The buildings are of brick, the ſtreets are ſpacious and well paved, and the water good. The trade with Great Britain, and the Britiſh colonies in America, procure plenty of all the neceſſaries of life, and in general the inhabitants are well dreſſed and polite. They have a market every Thurſday, and ſeveral fairs in a year. Long. 71. 5. W. Lat. 42. 24. N.

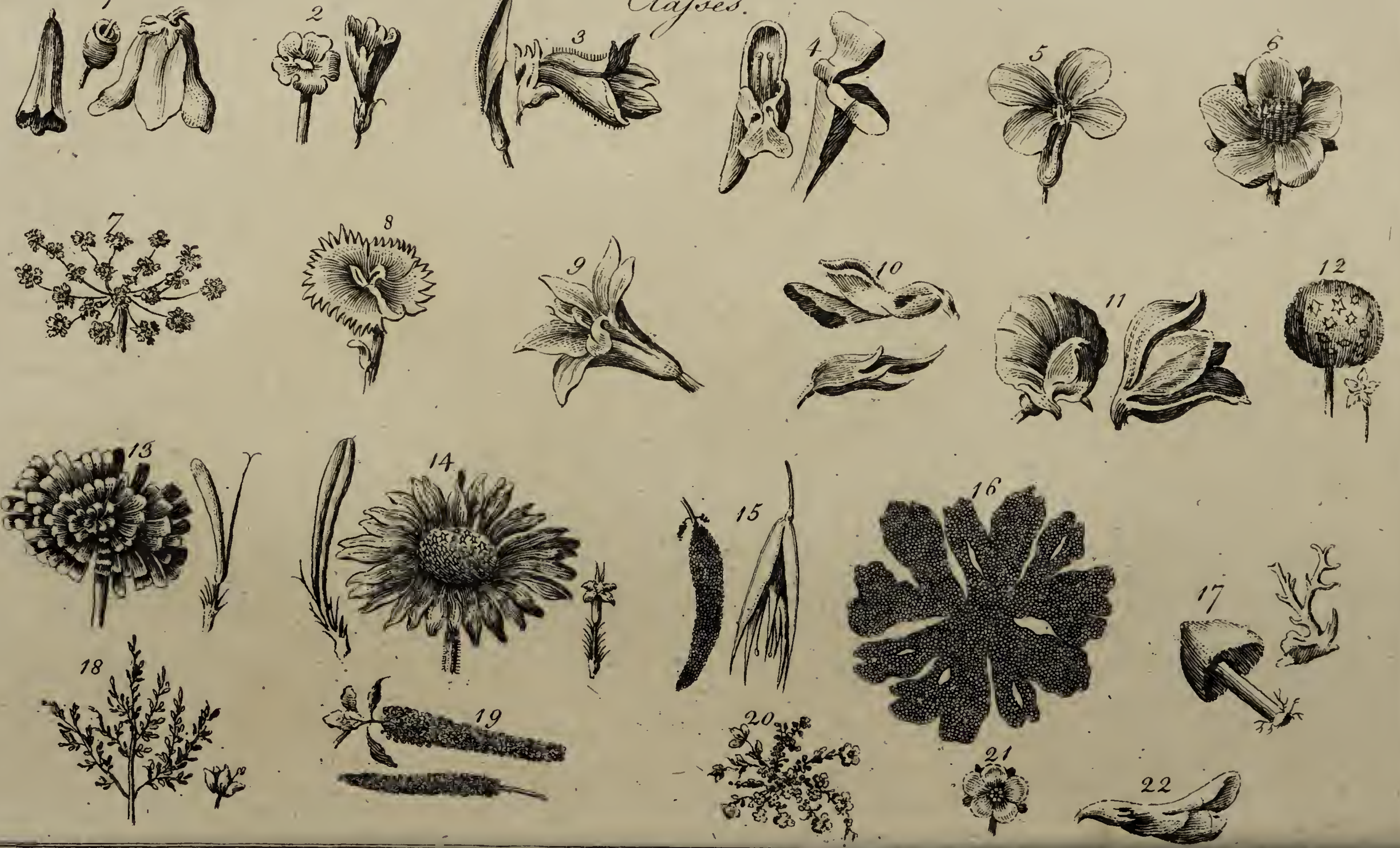
* BOSWORTH (Battle of) Auguſt 22, 1485. Richard III. having aſſembled his forces at Nottingham, hearing that the earl of Richmond's deſign was to march to London, he reſolved to give him battle on his route; and with that view encamped between Leiceſter and Coventry. Henry, in the mean time, advanced to Lichfield, from whence the lord Stanley retired at his approach, and took poſt at Atherſtone; and the earl having taken his meaſures with his two brothers, continued his march to Leiceſter, where he propoſed to venture a deciſive battle. In the neighbourhood of Tamworth, he dropped behind his army, and in a fit of muſing loſt his way; ſo that he was obliged to lie all night at a village, without daring to aſk the road, for fear of being ſuſpected and falling into the hands of his enemies. Next morning he made ſhift to rejoin his army at Tamworth, where, finding his friends had been greatly alarmed at his abſence, he told them he had gone to confer with ſome par-

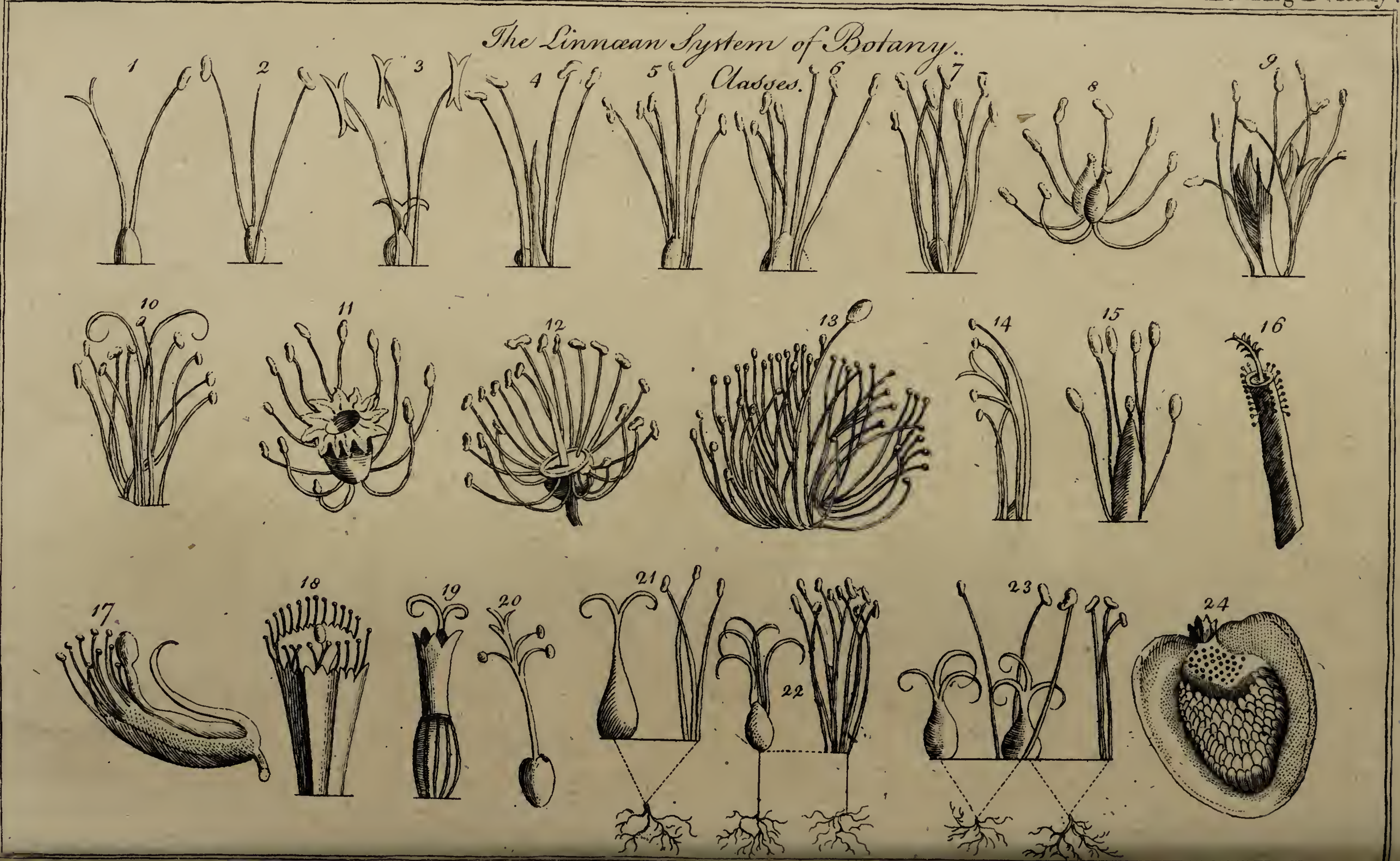
ticular noblemen, who did not chuſe to appear as yet in his behalf. That ſame day he privately viſited the lord Stanley at Atherſtone; and on the morrow, being informed that Richard had marched from Leiceſter to give him battle, he reſolved to ſpare him one half of the way. On the twenty-ſecond day of Auguſt, the two armies came in ſight of each other, at Boſworth, which is rendered famous in hiſtory by the battle which terminated the diſpute between the houſes of York and Lancaſter. Richard's army conſiſted of twelve thouſand men well accoutred. The command of the van he conferred on the duke of Norfolk; and he himſelf took poſt in the centre, with the crown upon his head, either as a mark of diſtinction, or a challenge to his adverſary. The earl of Richmond drew up his troops, amounting to five thouſand men, ill armed, in two lines; the command of the firſt he gave to the earl of Oxford, while he himſelf conducted the other. Lord Stanley, who quitted Atherſtone, took poſt in a piece of ground fronting the interval between the two armies; and his brother at the head of two thouſand men, ſtood facing him on the other ſide. Richard, ſuſpecting Stanley's deſign, ordered him to join his army, and receiving an equivocal anſwer, would have put his ſon to death, had not he been diverted from this purpoſe by the remonſtrances of his generals, who obſerved that ſuch a ſacrifice could be of no advantage to the royal cauſe, but would infallibly provoke Stanley and his brother to join the foe; though perhaps their intention was to remain neuter, and declare for the victor. Richard was perſuaded by this repreſentation: but he committed a fatal error in leaving the two brothers at liberty to act as they ſhould think proper. His army being equal in number to that of Richmond and the Stanleys, when joined together; he ought to have poſted two bodies oppoſite to the brothers, with orders to attack them if they ſhould attempt to join the enemy, while he himſelf with the remainder might have given battle to Henry. The two leaders having harangued their ſoldiers, the earl of Richmond made a motion to the left, in order to avoid a moraſs that divided the two armies; and, by this prudent meaſure, not only ſecured his right flank, but gained another advantage, in having the ſun at his back, while it ſhone full in the face of the enemy. Richard, ſeeing him approach, commanded the trumpets to ſound; and the battle began with a general diſcharge of arrows, after which the king's army advanced to cloſe combat. The lord Stanley, perceiving that the duke of Norfolk extended his line to the left, in order to ſurround the enemy, ſuddenly joined the earl of Richmond's right wing, in order to ſuſtain the attack; and Norfolk, ſeeing this junction, made a halt to cloſe his files, which had been too much opened for the extenſion of the line. The match being now pretty equal, the fight was renewed, though not with equal ardour on both ſides. The king's troops ſeemed to act with reluctance, and were, in all probability, diſpirited by the conduct of the two Stanleys, not knowing but their example might be followed by others in the heat of the engagement: on the other hand, the earl of Oxford charged them with ſuch impetuoſity, as contributed to damp their courage, and fill their hearts with deſpondence. Richard, in order to animate them with his preſence and example, advanced to the front of the battle: there perceiving his competitor, who had quitted the ſecond line for the ſame purpoſe, he couched his lance, and clapping ſpurs to his horſe, ran againſt him with ſuch fury, that he killed his ſtandard-bearer Sir William Brandon, father of Charles Brandon, afterwards duke of Suffolk, and unhorſed Sir John Cheyney, an officer remarkable for his ſtrength and proweſs. Henry, though he did not ſeem very eager to engage ſuch an antagoniſt, advanced to meet him, and kept him at his ſword's point, until they were parted by the ſoldiers, who interpoſed. While Richard made this furious effort againſt the perſon of his adverſary, Sir William Stanley declared for Richmond, and attacking the royaliſts in flank, drove their right wing upon the centre, which was ſo diſordered by the ſhock, that it began to fly with the utmoſt precipitation: while the earl of Northumberland, who commanded a ſeparate body, ſtood motionleſs, and refuſed to act againſt the enemy. The king ſeeing all his endeavours ineffectual to rally his troops, which were by this time in the utmoſt confuſion, and either ſcorning to outlive the diſgrace of an overthrow, or dreading the thoughts of falling alive into the hands of his enemy, ruſhed into the midſt of the battle, where he fought with the moſt deſperate courage, until he was overpowered by numbers, and fell dead in the midſt of thoſe whom he had ſlain. Though the battle laſted about two hours, including the time ſpent in the purſuit, there was not above one thouſand of the royaliſts

killed

Tourneforts System of Botany.

Claſses.





The Linnæan System of Botany.

Classes.

killed on the occaſion; becauſe the greater part fled betimes without fighting; and the earl did not loſe above an hundred men, of whom Sir William Brandon was the moſt conſiderable. On the ſide of the vanquiſhed, beſides Richard himſelf, the duke of Norfolk loſt his life; the lord Ferrars of Chartley, Sir Richard Radcliffe, and Sir Robert Brackenbury, the earl of Surrey, ſon to the duke of Norfolk, was taken priſoner and confined in the Tower of London, from which, however, he was ſoon ſet at liberty. The earl of Northumberland and ſeveral partiſans of Richard were taken into favour; and others had the good fortune to eſcape: but Cateſby the infamous miniſter and confident of the tyrant who had ſo villainouſly betrayed Haſtings, having fallen into the hands of the victors, was executed in two days after the battle at Leiceſter, with ſome others of the ſame ſtamp, who had devoted themſelves to the ſervice of Richard. Immediately after the engagement, the earl of Richmond fell down upon his knees in the open field, and thanked the Almighty for the bleſſing he had beſtowed on his arms: then riding up to an eminence, he applauded the ſoldiers for their valiant behaviour, and promiſed to reward them according to their deſerts. Richard's crown being found among the ſpoils of the field, was, by the lord Stanley, placed upon the head of Henry, who was ſaluted as king by the whole army; and from that moment he aſſumed the title. Richard's body being ſtripped ſtark naked, and covered with wounds, filth, and blood, was thrown over a horſe's back, with the arms on one ſide and the legs on the other, and carried to Leiceſter, where after having been expoſed two days, and treated with the utmoſt indignity, it was buried in the abbey-church in a private manner; though Henry, in reſpect to his family, ordered a tomb to be erected over his grave. Such was the end of Richard the third, the moſt cruel, unrelenting tyrant that ever ſat on the throne of England. He ſeems to be an utter ſtranger to the ſofter emotions of the human heart, and entirely deſtitute of every ſocial ſentiment. His ruling paſſion was ambition, for the gratification of which he trampled upon every law, both human and divine: but this thirſt of dominion was unattended with the leaſt mark of generoſity, or any deſire of rendering himſelf agreeable to his fellow creatures: it was the ambition of a ſavage, not of a prince; for he was a very ſolitary being, altogether detached from the reſt of mankind, and incapable of that ſatisfaction which reſults from private friendſhip, and diſintereſted ſociety. We muſt acknowledge, however, that after his acceſſion to the throne, his adminiſtration in general was conducted by the rules of juſtice, that he enacted ſalutary laws, and eſtabliſhed wiſe regulations; and that, if his reign had been protracted, he might have proved an excellent king to the Engliſh nation. He poſſeſſed an uncommon ſolidity of judgment, a natural fund of eloquence, the moſt acute penetration, and ſuch courage as no danger could diſmay. He was dark, ſilent, and reſerved, and ſo much maſter of diſſimulation, that it was almoſt impoſſible to dive into his real ſentiments, when he wanted to conceal his deſigns. His ſtature was ſmall, his aſpect cloudy, ſevere, and forbidding; one of his arms was withered, and one ſhoulder higher than the other; from which circumſtances of deformity he acquired the epithet of Crook-back. Richard III. was the laſt of the Anjevin race, ſurnamed Plantagenet, which had poſſeſſed the crown of England for the ſpace of three hundred and thirty years: but he was not the laſt male of that family in England: for the earl of Warwick, ſon to his brother Clarence, was ſtill alive, and the only remaining branch of all the numerous poſterity of the third Edward, which had been totally extinguiſhed in the civil war; a war which had raged for thirty years, and was terminated by the battle of Boſworth, after having coſt the lives of above one hundred thouſand Engliſhmen, including a great number of princes of the houſe of York and Lancaſter.

BOTANIST, one ſkilled in botany, and capable of aſſigning to every plant its proper characters and name.

BOTANY, the ſcience of plants, their ſeveral kinds, their forms, virtues, and uſes.

The moſt eminent botaniſts among the ancients were Hippocrates, Theophraſtus, Dioſcorides, Pliny, Galen, &c. In the ſixteenth century, the ancient botany was revived by Leonicenus, Braſavolus, Cordus, Fuchſius, Mathiolus, Dalechampius, &c. Theſe were ſoon after joined by others, and by their induſtry the art was firſt reduced into a body or ſyſtem; as Geſner, Dodonæus, Cæſalpinus, Cluſius, Lobel, Columma, Proſper Alpinus, the two Bauhins, Plunket, Bucconi, &c. Theſe were ſucceeded by others, who have laboured ſucceſsfully to bring the ſcience of botany ſtill nearer to perfection. Among theſe are Morriſon, Malpighi, Hermannus, Ray, Magnol, Tournefort, Sloane, Sherrard; Boerhaave, Linnæus, and many others.

The ſcience of botany is differently explained by different authors ; but the two ſyſtems of Tournefort and Linnæus more eſpecially deſerve our conſideration.

According to Tournefort, all plants are ranged under one or other of the following claſſes, viz. 1. Plants with monopetalous, campaniform, or bell-faſhioned flowers. 2. Thoſe with monopetalous, infundibuliform, or funnel-like flowers. 3. Plants with anomalous monopetalous flowers. 4. Plants with polypetalous labiated flowers. 5. Plants with polypetalous cruciform flowers. 6. Plants with polypetalous, roſaceous flowers. 7. Plants with polypetalous, roſaceous, and umbellated flowers. 8. Plants with caryophyllous or pink-like flowers. 9. Plants with liliaceous or lily-like flowers. 10. Plants with polypetalous papilionaceous flowers. 11. Plants with polypatelous anomalous flowers. 12. Plants with floſculous flowers. 13. Plants with ſemifloſculous flowers. 14. Plants with radicated flowers. 15. Plants with ſtamineous flowers. 16. Plants without flowers, but having viſible ſeeds 17. Plants with neither viſible flowers nor ſeeds. 18. Trees with apetalous flowers. 19. Trees with apetalous amentaceous flowers. 20. Trees with monopetalous flowers. 21. Trees with roſaceous flowers. 22. Trees with papilionaceous flowers. See the articles MONOPETALOUS, CAMPANIFORUM, &c. See Plate XIII.

Linnæus has eſtabliſhed an entirely new ſyſtem of botany, founded on the number and different ſtructure obſervable in the male and female parts of generation of each plant ; the former of which is called ſtamen, or ſtamina, where there are more than one of them ; and the latter piſtil. See the articles STAMEN and PISTIL.

From the number and ſituation of the ſtamina, he has arranged the whole family of plants under twenty-four claſſes, viz. 1. The monandria. 2. Diandria. 3. Triandria. 4. Tetrandria. 5. Pentrandria. 6. Hexandria. 7. Heptandria. 8. Octandria. 9. Enneandria. 10. Decandria. 11. Dodecandria. 12. Icoſandria. 13. Polyandria. 14. Didynamir. 15. Tetradynamia. 16. Monadelphia. 17. Diadelphia. 18. Polyadelphia. 19. Syngeneſia. 20. Gynandria. 21. Monoecia. 22. Dioecia. 23. Polygamia. 24. Cryptogamia. See the articles MONANDRIA, DIANDRIA, &c. See Plate XIV.

Theſe are the general claſſes or plants eſtabliſhed by that excellent botaniſt ; who farther ſubdivides them into orders, which he denominates monogynia, digynia, trigynia, &c. from the number of piſtils, or female parts of generation, found in each plant. See articles MONOGYNIA, DIGYNIA, TRIGYNIA, &c.

The ſame celebrated naturaliſt has likewiſe diſtributed the vegetable part of the creation into different orders, from the form and ſtructure of the calix, or cup, of their flowers, from the number of piſtils, or female parts of generation, in each plant, &c.

BOTRYS, in botany, a low ſomewhat hairy plant, of which there are two ſpecies, called Jeruſalem oak, and Mexico tea ; both natives of the ſouthern parts of Europe, and ſown annually with us in gardens. The infuſions, which are not unpalatable, drank as tea, are ſaid to be of ſervice in humoural aſthmas and coughs, and other diſorders of the breaſt : they are ſuppoſed alſo to be antiſpaſmodic and antihyſteric.

BOTTOM, in navigation, the channel of rivers and harbours, the body or hull of a ſhip : thus, in the former ſenſe, we ſay, a gravelly bottom, ſandy bottom, &c. and in the latter ſenſe, a Britiſh bottom, a French bottom, &c.

BOTTOMRY, in commerce, a contract for the borrowing money upon the keel or bottom of a ſhip ; that is to ſay, when the maſter of a ſhip binds the ſhip itſelf, that if the money be not paid by the time appointed, the creditor ſhall have the ſaid ſhip.

BOTTOMRY is alſo where a perſon lends money to a merchant who wants it in traffic, and the lender is to be paid a greater ſum at the return of the ſhip, ſtanding to the hazard of the voyage. On which account, though the intereſt be greater than what the law commonly allows, yet it is not uſury, becauſe the money being furniſhed at the lender's hazard, if the ſhip periſhes, he ſhares in the loſs.

* BOULTER (HUGH) archbiſhop of Armagh, primate and metropolitan of all Ireland, was born in London, and was much diſtinguiſhed by his learning, virtue, humanity, and natural endowments. He was educated at Merchant-Taylors ſchool, and at Chriſt-Church college, Oxford, and afterwards at Magdalen college.

In 1700, he was appointed chaplain to ſir Charles Hedges, principal ſecretary of ſtate, and alſo to Dr. Thomas Teniſon, archbiſhop of Canterbury; and was ſoon after preferred to the parſonage of St. Olave, Southwark, and the archdeaconry of Surry. In 1719, he was commanded to attend king George I. to Hanover as his chaplain, where, at the king's deſire, he took prince Frederic under his care, to inſtruct him in the Engliſh tongue, and was the ſame year promoted to the biſhopric of Briſtol and deanery of Chriſt-Church. While he was thus employed in one of his viſitations, he received a letter by a meſſenger from the ſecretary of ſtate, acquainting him that his majeſty had nominated him to the archbiſhopric of Armagh. Taking a few hours to recollect himſelf, he called for a pen and ink, and ſent an anſwer by the meſſenger, in which he declined the honour the king intended him; but the meſſenger was ſoon diſpatched back, with his majeſty's abſolute commands that he ſhould accept the poſt, on which he ſubmitted to the king's pleaſure. On his arrival in Ireland, in 1724, he immediately ſet about ſtudying the real and ſolid intereſt of that kingdom. In innumerable inſtances, he exerted himſelf in the nobleſt acts of beneficence; in ſeaſons of the greateſt ſcarcity, he was more than once inſtrumental in preventing a famine which threatened that nation. On one of theſe occaſions, he diſtributed vaſt quantities of corn throughout the kingdom, for which the houſe of commons paſſed a vote of public thanks. He had great compaſſion for the poor clergy of his dioceſe, who were diſabled from giving their children a proper education; and he maintained ſeveral of the children of ſuch in the univerſity; he erected four houſes at Drogheda, for the reception of clergymen's widows, and purchaſed an eſtate for the endowment of them. His charities for augmenting ſmall livings and buying glebes amounted to upwards of thirty thouſand pounds, beſides what he deviſed by will for the like purpoſes in England. In ſhort the inſtances he gave of his generoſity and benevolence of heart, his virtue, his piety, and his wiſdom, are almoſt innumerable. This excellent prelate died the 2d of June, 1742, and was interred in Weſtminſter-Abbey, where a beautiful marble monument is erected to his memory.

BOUNTY, in commerce, a premium paid by government to the exporters of certain Britiſh commodities, as ſail-cloth, gold and ſilver lace, fiſh, corn, &c. See SAIL-CLOTH, LACE, FISH, CORN, &c.

BOUTANT, or ARCH-BOUTANT, in architecture, a flat arch, or part of an arch, abutting againſt the reins of a vault, to prevent its giving way.

A pillar BOUTANT, a large chain or pile of ſtone, made to ſupport a wall, terrace, or vault.

BOW, *Arcus*, a weapon made of ſteel, wood, horn, or other elaſtic matter, which, after being bent by means of a ſtring faſtened to its two ends, in returning to its natural ſtate, throws out an arrow with prodigious force. The uſe of the bow is of the earlieſt antiquity. It has likewiſe been the moſt univerſal of all weapons, having obtained amongſt the moſt barbarous and remote people, who had the leaſt communication with the reſt of mankind. The bow is a weapon of offence amongſt the inhabitants of Aſia, Africa, and America, at this day; and in Europe, before the invention of fire-arms, a part of the infantry were armed with bows. Lewis XI. firſt aboliſhed the uſe of them in France, introducing in their place, the halbert, pike, and broad-ſword. The long bow was formerly in great vogue in England, and many laws were made to encourage the uſe of it. The parliament under Henry VII. complained of the diſuſe of long bows, heretofore the ſafeguard and defence of this kingdom, and the dread and terror of its enemies.

BOW, in naval architecture, the round part of a ſhip's ſide, forward, reaching from where the planks begin to bend inward, till they cloſe at the ſtem or prow. A ſhip with a narrow bow commonly ſails faſter than with a broad one; but is not ſo well calculated for a high ſea, being apt, for want of ſufficient reſiſtance, to plunge her fore part very deep, and endanger the maſts and rigging, as well as ſtrain the hull: the former of theſe is called, by ſeamen, a lean, and the latter a bluff-bow.

BOW, in muſic, a ſmall machine, which, being drawn over the ſtrings of a violin and other muſical inſtruments makes it reſound. It is compoſed of a ſmall ſtick, to which are faſtened eighty or an hundred horſe-hairs, and a ſcrew which ſerves to give theſe hairs the proper tenſion. In order that the bow may touch the ſtrings briſkly, it is uſual to rub the hairs with roſin.

BOW, among artificers, an inſtrument in uſe among gunſmiths, lockſmiths, watchmakers, &c. for making a drill go. Among turners, it is the name of that pole fixed to the ceiling, to which they faſten the cord that whirls round the piece to be turned.

BOWS *of a Saddle*, two pieces of wood laid archwiſe, to receive the upper part of a horſe's back, to give the ſaddle its due form, and to keep it tight.

BOWLINE, amongſt ſeamen, a rope, faſtened to the leech or perpendicular edge of the ſquare ſails, in three or four parts, called bridles; they are only uſed on the weather or wind ſide, to keep the ridge of the ſail tight forward, which would otherwiſe be always ſhivering as the ſhip ſails on a ſcant ſide wind. See CLOSE-HAULED.

BOWSPRIT, in naval affairs, a large boom or maſt which projects over the ſtem, to carry ſail on, and govern the fore part of the ſhip to counter-balance the ſail carried behind, or in the after-parts; and likewiſe to ſupport the fore-maſts, by ropes ſtretched from the maſt-head to the outer-end of the bowſprit, called ſtays. See BOOM and STAYS.

BOX, in a general ſenſe, a ſmall cheſt or coffer for holding things.

BOX *of a Plough*, the croſs piece in the head of a plough, which ſupports the two crow-ſtaves. See PLOUGH.

BOX, or BOX-TREE, in botany, the Engliſh name of *buxus*.

BOXING, in navigation, the act of bracing a ſhip's fore-moſt or head-ſails aback, i. e. on the wind-ſide of the maſt, when, by the negligence of the man who ſteers, ſhe had deviated from her courſe, and inclined her motion nearer to the direction of the wind than the ſails would ſtand full. The uſe of boxing is to impreſs a greater force on the ſhip's fore-part than uſual, to turn it further from the courſe of the wind, till ſhe lies in the line of motion from which ſhe had declined.

BOYAU, in fortification, a ditch covered with a parapet, ſerving as a communication between two trenches. It runs parallel to the works of the body of the place, and ſerves as a line of contravallation, not only to hinder the ſallies of the beſieged, but alſo to ſecure the miners.

* BOYDE (WILLIAM) earl of Kilmarnock, was the ſon of William Boyde, earl of Kilmarnock, who, in the rebellion in 1715, was very active in the ſervice of the government, and died two years after. The earl was but thirteen years of age when his father died; part of the family eſtate was then alienated, and the reſt pretty much encumbered. As he grew up, he lived above his income, which ſtill farther reduced his eſtate; hence, with the hopes of mending his fortune, he, in the late rebellion, joined the pretender's ſtandard, upon which he was made colonel of the guards, promoted to the rank of general, and declared of his privy council. His lordſhip was taken priſoner at the battle of Culloden, and brought to England, put into the Tower, and on Monday, the 28th of July, 1746, was, with lord Balmerino and the earl of Cromartie, conducted to the bar of the houſe of lords, in Weſtminſter-hall, and tried by his peers, when pleading guilty he ſubmitted himſelf to his majeſty's mercy and clemency. Being brought the Wedneſday following, to receive ſentence, he delivered an elegant ſpeech, after which ſentence of death was pronounced upon him, and on the 18th of Auguſt, 1746, he was beheaded on Tower-hill, at forty-two years of age. The Rev. Mr. Foſter, who attended him in the Tower, obſerves, that his whole deportment, from the time of his being condemned till his execution, was exceedingly becoming; and as he gave the moſt lively marks of ſincere repentance, his behaviour in the hour of death was reſigned, decent, and awful.

* BOYNE, *Battle of the*, July 1, 1690, at ſix o'clock in the morning, general Douglas, with young Schomberg, the earl of Portland and Overkirk, marched towards Slane-bridge, and paſſed the river with very little oppoſition. When they reached the farther bank, they perceived the enemy drawn up in two lines, to a conſiderable number of horſe and foot, with a moraſs in their front; ſo that Douglas was obliged to wait for a reinforcement. This being arrived, the infantry were led on to the charge through the moraſs, while count Schomberg rode round it with his cavalry, to attack the enemy in flank. The Iriſh inſtead of waiting the aſſault, faced about and retreated towards Duleek with ſome precipitation; yet not ſo faſt, but that Schomberg fell in among their rear, and did conſiderable execution. King James, however, ſoon reinforced his left wing from the center, and the count in his turn was obliged to ſend for aſſiſtance. At this juncture, William's main body, conſiſting of the Dutch guards, the French regiments, and ſome battalions of Engliſh, paſſed the river, which was waiſt

high, under a general diſcharge of artillery. King James had imprudently removed his cannon from the other ſide; but he had poſted a ſtrong body of muſqueteers along the bank, behind hedges, houſes, and ſome works raiſed for the occaſion. They poured in a cloſe fire upon the Engliſh troops before they reached ſhore, but it produced very little effect: then the Iriſh gave way, and ſome battalions landed without farther oppoſition; yet, before they could form, they were charged with great impetuoſity by a ſquadron of the enemy's horſe, and a conſiderable body of their cavalry and foot, commanded by general Hamilton, and advanced from behind ſome little hillocs, to attack thoſe that were landed, as well as to prevent the reſt from reaching the ſhore. His infantry turned their backs and fled immediately; but, the horſe charged with incredible fury, both upon the bank and in the river, ſo as to put the unformed regiments in confuſion. Then the duke of Schomberg paſſing the river in perſon, put himſelf at the head of the French proteſtants, and pointing to the enemy, "Gentlemen (ſaid he) thoſe are your perſecutors;" with theſe words he advanced to the attack, where he himſelf ſuſtained a violent onſet from a party of Iriſh horſe, which had broke through one of the regiments, and were now on their return. They were miſtaken for Engliſh, and allowed to gallop up to the duke, who received two ſevere wounds in the head; but the French regiments being now ſenſible of their miſtake, raſhly threw in their fire upon the Iriſh while they were engaged with the duke; and inſtead of ſaving, ſhot him dead upon the ſpot. The fate of this general had well nigh proved fatal to the Engliſh army, which was immediately involved in tumult and diſorder; while the infantry of king James rallied and returned to their poſts with a face of reſolution. They were juſt ready to fall upon the center, when king William having paſſed with the left wing, compoſed of the Daniſh, Dutch, and Inniſkillin horſe, advanced to attack them on the right. They were ſtruck with ſuch a pannic at his appearance, that they made a ſudden halt, and then facing about, retreated to the village of Dunore. There they made ſuch a vigorous ſtand, that the Dutch and Daniſh horſe, though headed by the king in perſon, recoiled. Even the Inniſkilliners gave way; and that whole wing would have been routed, had not a detachment of dragoons belonging to the regiments of Cunningham and Leviſon, diſmounted, and lined the hedges on each ſide of the defile, through which the fugitives were driven. There they did ſuch execution upon the purſuers as ſoon checked their ardour. The horſe which were broken, had now time to rally, and returning to the charge, drove the enemy before them in their turn. In this action general Hamilton, who had been the life and ſoul of the Iriſh during the whole engagement, was wounded and taken; an incident which diſcouraged them to ſuch a degree, that they made no further efforts to retrieve the advantage they had loſt. He was immediately brought to the king, who aſked him if he thought the Iriſh would make any further reſiſtance? and he replied, "Upon my honour, I believe they will; for they have ſtill a good body of horſe entire." William eying him with a look of diſdain, repeated "Your honour! Your honour!" but took no other notice of his having acted contrary to his engagement, when he was permitted to go to Ireland, on promiſe of perſuading Tyrconnel to ſubmit to the new government. The Iriſh now abandoned the field with precipitation; but, the French and Swiſs troops that acted as their auxilaries, under Lauzum, retreated in good order, after having maintained the battle for ſome time with intrepidity and perſeverance. As king William did not think proper to purſue the enemy, the carnage was not great. The Iriſh loſt about fifteen hundred men, and the Engliſh about one third of that number; though the victory was dearly purchaſed, conſidering the death of the gallant duke of Schomberg, who fell in the eighty-ſecond year of his age, after having rivalled the beſt generals of the age in military reputation. He was deſcended from a noble family in the Palatinate, and his mother was an Engliſh woman, daughter of lord Dudley. Being obliged to leave his country on account of the troubles by which it was agitated, he commenced a ſoldier of fortune, and ſerved ſucceſsfully in the armies of Holland, England, France, Portugal, and Brandenburgh. He attained to the dignity of marechal in France, grandee in Portugal, generaliſſimo in Pruſſia, and duke in England. He profeſſed the proteſtant religion; was courteous and humble in his deportment, cool, penetrating, reſolute, and ſagacious; nor was his probity inferior to his courage. This battle likewiſe proved fatal to the brave Caillimote, who had followed the duke's fortunes, and commanded one of the proteſtant regiments. After having received a mortal wound, he was carried back through the river by four ſoldiers; and though almoſt in the agonies of death, he with a chearful countenance, encouraged thoſe who were croſſing to do their duty, exclaiming, “A la gloire mes enfans; a “ la gloire? To glory, my lads; to glory!” The third remarkable perſon, who loſt his life on this occaſion, was Walker the clergyman, who had ſo valiantly defended Londonderry againſt the whole army of king James. He had been very graciouſly received by king William, who gratified him with a reward of five thouſand pounds, and a promiſe of further favour: but his military genius ſtill predominating, he attended his royal patron in this battle; and being ſhot in the belly, died in a few minutes. The perſons of diſtinction who fell on the other ſide, were the lords Dongan and Carlingford, Sir Neile O Neile, and the marquis of Hocquincourt. James himſelf ſtood aloof during the action, on the hill of Dunmore, ſurrounded with ſome ſquadrons of horſe; and ſeeing victory declare againſt him, retired to Dublin, without making the leaſt effort to reaſſemble his broken forces. Had he poſſeſſed either ſpirit or conduct, his army might have rallied, and been reinforced from his garriſons; for his loſs was inconſiderable, and the victor did not attempt to moleſt his troops in their retreat; an omiſſion which has been charged upon him as a flagrant inſtance of miſconduct. Indeed, through the whole of this engagement, his perſonal courage was much more conſpicuous than his military ſkill. King James no ſooner arrived at Dublin, than he aſſembled the magiſtrates and council of the city, and in a ſhort ſpeech reſigned them to the fortune of the victor. He complained of the cowardice of the Iriſh; ſignified his reſolution of leaving the kingdom immediately; forbid them, on their allegiance, to burn or plunder the city after his departure; and aſſured them, that though he was obliged to yield to force, he could never ceaſe to labour for their deliverance. Next day he ſet out for Waterford, attended by the duke of Berwick, Tyrconnel, and the Marquis of Powis. He ordered all the bridges to be broken down behind him, and embarked in a veſſel which had been prepared for his reception. At ſea he fell in with the French ſquadron, commanded by the ſieur de Foran, who perſuaded him to go on board one of his frigates, which was a prime ſailer. In this he was ſafely conveyed to France, and returned to the place of his former reſidence at St. Germain's. He had no ſooner quitted Dublin, than it was alſo abandoned by all the papiſts. The proteſtants immediately took poſſeſſion of the arms belonging to the militia, under the conduct of the biſhop of Meath, and Limerick. A committee was formed to take charge of the adminiſtration; and an account of theſe tranſactions was tranſmitted to king William, together with a petition that he would honour the city with his preſence.

BRACE, a couple or pair, and applied by huntſmen to ſeveral beaſts of game, as a brace of bucks, foxes, hares, &c.

BRACE, in architecture, a piece of timber framed in with bevel joints, the uſe of which is to keep the building from ſwerving either way. When the brace is framed into the kingleſſes, or principal rafters, it is by ſome called a ſtrut.

BRACES, in naval affairs, the ropes faſtened to the yard-arms or ends, to wheel or traverſe them about the maſts in a horizontal direction, for the more conveniently adapting the ſails to the wind.

BRACELET, an ornament worn on the wriſt, much uſed among the ancients.

BRACHIÆUS, in anatomy, an oblong, thick, and broad muſcle, lying immediately on the anterior part of the lower half of the os humeri. The upper part of it is forked or ſloped, and at the bending of the joint of the elbow, the lower part contracts.

BRACHIUM, ARM, in anatomy, one of the ſuperior extremities of the human body, comprehending the ſcapula, the os humeri, the cubit, and the hand. See the SCAPULA, ARM, HAND, &c.

BRACHMANS, a ſect of Indian philoſophers. The ancient Brachmans lived upon herbs and pulſe, and abſtained from every thing that had life in it. They lived in ſolitude without matrimony, and without property; and they wiſhed ardently for death, conſidering life only as a burden. The modern Brachmans make up one of the caſts or tribes of the Banians. They are the prieſts of that people, and perform their office of praying and reading the law, with ſeveral mimical geſtures, and a kind of wavering voice. They admit of rewards and puniſhments after this life; and have ſo great a veneration for cows, that they look on themſelves as bleſſed, if they can but die with the tail of one of them in their hand. They have preſerved ſome noble fragments of the knowledge of the ancient Brachmans. They are ſkilled arithmeticians, and calculate, with great exactneſs, eclipſes of the ſun and moon. They are remarkable for their religious auſterities. One of them has been known to make a vow to wear about his neck a heavy collar of iron for a conſiderable time: another, to chain himſelf by the foot to a tree, with a firm reſolution to die in that place; and another to walk in wooden ſhoes ſtuck full of nails on the inſide.

BRACHYGRAPHY, the art of ſhort-hand writing.

The word is compounded from the Greek *Brachys*, ſhort, and *Grapho*, to write.

BRACKET, a kind of wooden ſtay, ſerving to ſupport ſhelves, and the like.

BRACKETS, in naval architecture, ſhort crooked timbers reſembling knees, fixed in the frame of a ſhip's head to ſupport the gratings.

BRACKETS, in gunnery, the cheeks of the carriage of a mortar: they are made of ſtrong planks of wood, of almoſt a ſemicircular figure, and bound round with thick iron plates; they are fixed to the beds by four bolts, which are called bed-bolts; they riſe up on each ſide of the mortar, and ſerve to keep her to any elevation, by means of ſome ſtrong iron bolts, called bracket-bolts, which go through theſe cheeks or brackets.

* BRACKLEY, a borough town in Northamptonſhire; it has a market on Wedneſdays, and five fairs, on Wedneſday after February 25, for horſes, cows, and ſheep; on the third Saturday in April, for horſes, cows, and hogs; on Wedneſday after June 22, for horſes and cows; on Wedneſday before October 10, for hiring ſervants, horſes, and cows; and December 11, for horſes, cows, and ſheep. It is ſeated on the edge of the county, next Buckinghamſhire, on a branch of the river Ouſe. It is an ancient and large corporation town, containing two pariſh churches, and is governed by a mayor and aldermen, and ſends two members to parliament. It had formerly a college, which is turned into a free-ſchool. The market is but ſmall. It is ſixty-four miles north-weſt from London. Lat. 52. 0. N.

BRACTEARIA, in natural hiſtory, a genus of talcs, compoſed of ſmall plates in form of ſpangles, each plate being either very thin, or diviſible into very thin ones.

* BRADLEY (Dr. JAMES) fellow of the Royal Society in London, and member of the Academy of Sciences and Belles Lettres of Paris, &c. was born at Shireborn, in Glouceſterſhire, in 1692, and educated at Oxford, and in 1719 was inſtituted to the vicarage of Bridſtow, in Herefordſhire. He received the firſt rudiments of the mathematics from his uncle, Dr. James Pound, who reſided at his living in Eſſex, and on the death of John Kiel, M. D. was, in 1721, choſen Savilian profeſſor of aſtronomy in Oxford, on which he reſigned his living. Notwithſtanding his innate modeſty he was ſoon diſtinguiſhed by the friendſhip of ſir Iſaac Newton, lord chancellor Macclesfield, and Dr. Edmund Halley, his colleague in the Savilian profeſſorſhip. In 1730 he ſucceeded Mr. Whiteſide as lecture-reader of aſtronomy and experimental philoſophy, in the univerſity of Oxford; and, at the deceaſe of Dr. Halley, was choſen aſtronomical obſervator at the Royal Obſervatory at Greenwich, and honoured with the degree of doctor of divinity. In 1747 he publiſhed his Letters on the apparent Motion obſerved in ſome of the fixed Stars; and on account of this curious diſcovery, obtained the annual gold prize medal from the Royal Society. In conſequence of this letter, his late majeſty cauſed him to be paid a thouſand pounds, to repair the old inſtruments in that obſervatory, and for providing new ones, which enabled him to furniſh it with the nobleſt and moſt accurate apparatus in the known world. He was remarkable for the evenneſs of his temper, and for his amiable diſpoſition, and was particularly diſtinguiſhed for his modeſty and taciturnity; yet when drawn into converſation, none were more ready, more open, or more clear, nor took more pains to adapt himſelf to the capacity and underſtanding of thoſe with whom he converſed. He was always temperate, eaſy of acceſs, humane, benevolent, and kind, was never tenacious of his own opinion, and was free from bigotry and oſtentation. He died the 13th of July, 1762, in the ſeventieth year of his age.

BRADS, among artificers, a ſort of nails uſed in building, which have no ſpreading heads. They are diſtinguiſhed by ironmongers, by ſix names, as joiner's brads, flooring brads, batten-brads, bill-brads, or quarter-heads, &c. Joiner's brads are for hard wainſcot, batten-brads for ſoft wainſcot; bill-brads are uſed when a floor is laid in haſte, or for ſhallow joiſts ſubject to warp. See NAIL.

BRADYPUS, in zoology, a genus of quadrupeds, of the order of the anthropomorpha of Linnæus, otherwiſe called *ignavus*, and in Engliſh, the ſloth; the characters of which are, that its feet have no great toe, and are made for climbing.

Of this genus there are two ſpecies. 1. The American ſloth, with a ſhort tail, and only three toes on each foot. 2. The Ceylon ſloth, with only two toes on each foot, and no tail.

BRAGGET, drink made of malt, honey, and ſpices, much uſed in Wales.

BRAILS, in naval affairs, ropes fixed to different places on the mizen above and below, to gather it up cloſe to the maſt when it is not required.

BRAILS, a general name given to all the ropes which haul the bottoms, edges, and lower corners of the other ſails up to their yards, for the more eaſily furling them; and this is called brailing them up, or hauling them up in the brails.

BRAIN, in anatomy, ſays Winſlow, a name given to all that maſs which fills the cavity of the cranium, and which is immediately ſurrounded by two membranes, called meninges by the Greeks, and matres by other ancients, becauſe they were commonly of opinion that theſe membranes were the origin, and, as it were, the mother of all the other membranes of the body.

This general maſs is divided into three particular portions; the cerebrum, or brain, properly ſo called; the cerebellum, and medulla oblongata. To theſe three parts contained within the cranium, a fourth is added, which fills the great canal of the ſpina dorſi by the name of medulla ſpinalis, being a continuation of the medulla oblongata.

The meninges, or membranes are two in number, one of which is very ſtrong, and lies contiguous to the cranium; the other is very thin, and immediately touches the brain. The firſt is named dura mater; the ſecond pia mater, which is again divided into two, the external lamina being termed arachnoides, and the internal retaining the common name of pia mater. See *Dura* MATER and *Pia* MATER.

The cerebrum, properly ſo called, is a kind of medullary maſs, of a moderate conſiſtence, and of a greyiſh colour on the outer ſurface, filling all the ſuperior portion of the cavity of the cranium, or that portion which lies above the tranſverſe ſeptum. The upper part of the cerebrum is of an oval figure, like half an egg cut lengthwiſe, or rather like two quarters of an egg cut lengthwiſe, and parted a little from each other. It is flatter on the lower part, each lateral half of which is divided into three eminences, called lobes, one anterior, one middle, and one poſterior.

The ſubſtance of the cerebrum is of two kinds, diſtinguiſhed by two different colours; one part of it, which is the ſofter, being of a greyiſh or aſh colour; the other, which is more ſolid, very white. The aſh-coloured ſubſtance lies chiefly on the outer-part of the cerebrum, like a kind of cortex; from whence it has been named ſubſtantia corticalis or cinerea. The white ſubſtance occupies the inner part, and is named ſubſtantia medullaris, or ſimply ſubſtantia alba.

The cerebrum is divided into two lateral portions, ſeparated by the falx, or great longitudinal ſeptum of the dura mater. They are generally termed hemiſpheres; but they are more like quarters of an oblong ſpheroid. Each of theſe portions is divided into two extremities, one anterior, and one poſterior, which are termed the lobes of the cerebrum, between which there is a large inferior protuberance which goes by the ſame name; ſo that in each hemiſphere there are three lobes, one anterior, one middle, and one poſterior.

The anterior lobes lie upon thoſe parts of the os frontis which contribute to the formation of the orbits and of the frontal ſinuſſes, commonly called the anterior foſſæ of the baſis cranii. The poſterior lobes lie on the tranſverſe ſeptum; and the middle lobes, in the middle of lateral foſſæ of the baſis cranii.

Each lateral portion of the cerebrum has three ſides; one ſuperior, which is convex; one inferior, which is uneven; and one lateral, which is flat; and turned to the falx. Through the whole ſurface of theſe three ſides we ſee inequalities or windings like the circumvolutions of the inteſtines, formed by waving ſtreaks or furrows very deep and narrow, into which the ſepta, or duplicatures of the pia mater inſinuate themſelves, and thereby ſeparate theſe circumvolutions from each other.

Near the ſurface of the cerebrum, theſe circumvolutions are at ſome diſtance from each other, repreſenting ſerpentine ridges; and in the interſtices between them, the ſuperficial veins of the cerebrum are lodged, between the two laminæ of the pia mater, by an infinite number of very fine vaſcular filaments, as may be ſeen by pulling the circumvolutions a little aſunder with the fingers.

When they are cut tranſverſly, we obſerve that the ſubſtantia alba lies in the middle of each circumvolution; ſo that there is the ſame number of internal medullary circumvolutions as of external cortical ones; the firſt repreſenting white laminæ inveſted by others of an aſh-colour; but the cortical ſubſtance is in many places thicker than the medullary.

The anterior and middle lobes of the cerebrum on each ſide are parted by a deep narrow ſulcus, which aſcends obliquely backward, from the temporal ala of the os ſphenoides to near the middle of the os parietale; and the two ſides of this diviſion have each their particular ridges and circumvolutions, which gives a very great extent to the cortical ſubſtance. This ſulcus is termed fiſſura magna ſilvii, or ſimply fiſſura cerebri.

The corpus calloſum is a white convex body, being a middle portion of the medullary ſubſtance, whoſe ſurface is covered by the pia mater. Along the middle of its ſurface, from one end to another, there is a kind of raphe formed by a particular intertexture of fibres, which croſs each other. After its uniting with the cortical ſubſtance, a medullary arch or vault of an oval figure is formed.

Under this arch are two lateral and ſhallow cavities, ſeparated by a tranſparent medullary ſeptum; and generally called the anterior ſuperior ventricles of the cerebrum.

The above tranſparent partition is generally called the ſeptum lucidum, and lies directly under the raphe or ſuture of the corpus calloſum, of which it is a continuation.

The ſeptum lucidum is united by its lower part to the anterior portion of that medullary body improperly called the fornix, with three pillars; becauſe it is thought to bear ſome reſemblance to the arches of ancient vaults.

The fornix being cut off and inverted, or quite removed, we firſt perceive a vaſcular web, called plexus choroides, and ſeveral eminences more or leſs covered by the expanſion of that plexus. There are four pairs of eminences, which follow each other very regularly, two large and two ſmall. The firſt pair of larger eminences are named corpora ſtriata, for their having a great number of white and aſh-coloured ſtreaks alternately diſpoſed thro' their ſubſtance; and the ſecond pair, thalami nervorum opticorum, becauſe theſe nerves ariſe chiefly from them. The four ſmall eminences are cloſely united together, the anterior being called nates, and the poſterior teſtes; though it would be better to call them ſimply, anterior and poſterior tubercles.

Immediately before theſe tubercles, there is a ſingle eminence called glandula pinealis, a ſmall, ſoft, greyiſh body, about the ſize of an ordinary pea, irregularly round, and ſometimes of the figure of a pine apple. This gland, which Des Cartes will have to be the ſeat of the ſoul, has been often found to contain gravel.

Between the baſis of the anterior pillar of the fornix, and the anterior part of the union of the optic thalami, lies a cavity or foſſula, called infundibulum. It runs down towards the baſis of the cerebrum, contracting gradually, and terminates by a membraneous canal in a ſoftiſh body, ſituated in the ſella ſphenoidalis, named glandula pituitaria. The infundibulum opens above, immediately before the optic thalami, by an oval hole, called foramen commune anterius, and conſequently communicates with the lateral ventricles.

The cerebellum is contained under the tranſverſe ſeptum of the dura mater. It is broader laterally than on the fore or back-ſides, flatted on the upper-ſide, and gently inclined both ways, anſwerable to the ſeptum, which ſerves it as a kind of tent or cieling. On the lower ſide it is rounder, and on the back-ſide divided into two lobes, ſeparated by the occipital ſeptum of the dura mater.

It is made up, like the cerebrum, of two ſubſtances; but has no circumvolutions on its ſurface. Its ſulci are pretty deep, and diſpoſed in ſuch a manner as to form that flat ſtrata, more or leſs horizontal, between which the internal lamina of the pia mater inſinuates itſelf by a number of ſepta, equal to that of the ſtrata.

Under the tranſverſe ſeptum, it is covered by a vaſcular texture, which communicates with the plexus choroides. It has two middle eminences called appendices vermiformes; one anterior and ſuperior, which is turned forward; the other poſterior and inferior, which goes backward. There are likewiſe two latter appendices, both turned outward. They are termed vermiformes from their reſemblance to a large portion of an earthworm.

Beſides the diviſion of the cerebellum into lateral portions, or into lobes, each of theſe lobes ſeems to be likewiſe ſubdivided into three protuberances, one anterior, one middle or lateral, and one poſterior; but they are not in all ſubjects equally diſtinguiſhed either by their convexity or limits; but they may always be diſtinguiſhed by the direction of their ſtrata, thoſe of the middle and anterior protuberances being leſs tranſverſe than in the poſterior.

When we ſeparate the two lateral portions or lobes, having firſt made a pretty deep inciſion, we dicover firſt of all the poſterior portion of the medulla oblongata; and in the poſterior ſurface of this portion, from the tubercula quadrigemina, all the way to the poſterior notch of the body of the cerebellum, we obſerve an oblong cavity, which terminates backward, like the point of a writing pen. This cavity is called the fourth ventricle.

The medulla oblongata is a medullary ſubſtance, ſituated from before backward, in the middle part of the baſis of the cerebrum and cerebellum, without any diſcontinuation, between the lateral parts of both theſe baſes; and therefore it may be looked upon as one middle medullary baſis, common to both cerebrum and cerebellum, by the reciprocal continuity of their medullary ſubſtances, through the great notch in the tranſverſe ſeptum of the dura mater, which common baſis lies immediately on that portion of the dura mater which lines the baſis of the cranium. The medulla oblongata is therefore juſtly eſteemed to be a third general part of the whole maſs of the brain, or as the common production of united elongation of the whole medullary ſubſtance of the cerebrum and cerebellum.

It is extremely difficult, if not altogether impoſſible, to examine or demonſtrate it as we ought, in its natural ſituation; but we are obliged to do both on a brain inverted. However, to prevent falſe ideas either in viewing ourſelves, or in ſhewing to others, the medulla oblongata thus inverted, it is very neceſſary often to call to mind that all that appears ſuperior in that ſituation, is inferior in the natural ſtate.

The lower ſide of the medulla oblongata, in an inverted ſituation, preſents to our view ſeveral parts, which are in general either medullary productions, trunks of nerves, or trunks of blood veſſels.

The chief medullary productions are theſe: the large or anterior branches of the medulla oblongata, which have likewiſe been named crura anteriora, femora and brachia medullæ oblongatæ, and pedunculi cerebri; the tranſverſe protuberance, called alſo proceſſus annularis or pons Varolii; the ſmall or poſterior branches, called pedunculi cerebelli, or crura poſteriora medullæ oblongatæ; the extremity or cauda of the medulla oblongata, with two pairs of tubercles, one of which is named corpora olivaria, the other corpora pyramidalia: and to all theſe productions we muſt add a production of the infundibulum and two medullary papillæ.

We muſt obſerve in general concerning the eminences of the medulla oblongata, that thoſe which are medullary on their outſides or ſurfaces, are interiorly either entirely cortical, or partly cortical and partly medullary, or formed by a ſingular mixture of theſe two ſubſtances.

From this common portion of the cerebrum and cerebellum, ariſe almoſt all the nerves which go out of the cranium through the different foramina by which its baſis is perforated. It likewiſe produces the medulla ſpinalis, which is no more than a common elongation of the cerebrum and cerebellum, and of their different ſubſtances; and therefore the medulla oblongata may be juſtly ſaid to be the firſt origin or primitive of all the nerves which go out through the ſpina dorſi, and conſequently of all the nerves of the human body. See MEDULLA *Spinalis*, and NERVE. *Winſlow's Anatomy.*

Uſes of the BRAIN, *and of its Appendages in general.*—We are obliged to the great Malphigi for the firſt and beſt inſtruction concerning the manner of examining the ſtructure of the brain, eſpecially that of the two ſubſtances of which it is made up, and for putting us in a condition to be able to conjecture ſomething about its uſes. The experiments and obſervations of that illuſtrious and faithful ſearcher into nature, having been repeated by ſeveral excellent philoſophers, and confirmed by comparative anatomy, leaves us no room to doubt but that the brain is a ſecretory organ, or, as it is called by anatomiſts, a gland.

It is to no purpoſe to diſpute about words, when we are agreed as to the things themſelves. Anatomiſts have for many years paſt underſtood by the word gland, an organ fitted to ſeparate ſome particular fluid from the maſs of blood, as univerſally as they mean by the word muſcle, all ſorts of fleſhy fibres capable of contraction: and this laſt term might be cavilled at and rejected as juſtly as the other.

The whole matter of ſecretions muſt be owned to be very obſcure; but it is to be hoped that the brain and liver will ſome time or other lead us ſo far into the knowledge of it, as at leaſt to be able to diſtinguiſh truth from falſhood.

The infinite number of ſmall ſecretory cluſters of glands in the brain, ſtrain or filter the maſs of blood carried to them by the numerous ramifications, and ſeparate from it an exceſſively fine fluid: the remaining blood being conveyed back by the ſame number of venal extremities into the ſinuſſes of the dura mater, and from thence into the jugular and vertebral veins.

The ſubtle fluid, commonly called animal ſpirit, nervous juice, or liquor of the nerves, is continually forced into the medullary fibres of the white portion of the cerebrum, cerebellum, medulla oblongata, and medulla ſpinalis; and by the intervention of theſe fibres, ſupplies and fills the nerves, which are a continuation of them.

All the nervous ropes, as they paſs through the foramina of the cranium and vertebræ, are accompanied by particular elongations of the pia and dura mater. Thoſe of the dura mater ſerve them for vaginæ in their paſſage through the bony openings. Thoſe of the pia mater not only accompany and inveſt each nervous rope, but alſo form internal ſepta, between all the filaments of which each rope conſiſts. It is known from many experiments, that the nerves are the primitive or original organs of all muſcular motion, and of all animal ſenſation; and that theſe two functions depend in general on the brain; but we are ignorant of the nature of this dependence, and of the particular uſe of the medullary fibres of the nervous fluid, and of the membraneous productions which accompany the fibres and nerves.

Neither is there any thing in what has been ſaid concerning the deſign or particular uſes of the ſuperficial conformation of the cerebrum and cerebellum, or of the different configuration of their turnings, circumvolutions, eminencies, depreſſions, expanſions, and various folds. It may be affirmed in general, that by this ſtructure the extent of the ſecretory organ of the nervous fluid is increaſed very conſiderably, and the particular functions of each nervous rope diſtinguiſhed, and likewiſe their general and reciprocal correſpondence, both in regard to the exquiſiteneſs of the organs of ſenſation, and rhe activity of the organs of motion.

The falx of the dura mater hinders one portion of the cerebrum from preſſing on the other, when we lie on one ſide. The tranſverſe ſeptum ſerves for a tent to the cerebellum, and defends it from a mortal compreſſion, which it muſt otherwiſe be liable to from the cerebrum, eſpecially when we walk or jump.

The ſeptum and productions of the pia mater connect and ſtrengthen all the circumvolutions, diviſions, and ridges of the cerebrum, cerebellum, &c. and ſuſtain in a general and almoſt incomprehenſible manner all the branches and ramifications of the blood veſſels, all the medullary filaments, and all the elongations and ropes that depend on theſe. *Winſlow's Anatomy.*

BRAMBLE, or BRAMBLE-BUSH, in botany, the Engliſh name of the rubus of authors. See Rubus.

BRAMBLE-NET, otherwiſe called hallier, a net to catch birds in, of ſeveral ſizes; the great meſhes muſt be four inches ſquare; thoſe of the leaſt ſize are three or four inches ſquare; and thoſe of the largeſt five. In the depth, they ſhould not be above three or four inches; but as for the length, they may be enlarged at pleaſure; the ſhorteſt being eighteen feet long.

BRAMINS. See Brachmans.

BRAN, the ſkins or huſks of corn, eſpecially wheat ground, ſeparated from the flour by a ſieve or boulter.

The dyers reckon bran among the non-colouring drugs, and uſe it for making what they call the four waters, with which they prepare their ſeveral dyes.

Bran, alſo being of a porous ſpongy ſubſtance, is uſed, in pharmacy, as a ſuppurative and digeſtive medicine.

BRANCH, in botany, an arm of a tree, or a part ſprouting out from the trunk, which helps to form the head or crown thereof. As branches have their outward parts common with the chief ſtem, ſo in like manner do their inward conſiſt of a multitude of tubes, which are alſo provided with a number of ſmall glands, veins, and muſcles, interſperſed here and there, where the ſap coming from the firſt canal is rendered much more delicate.

BRANCH, a term in genealogy and anatomy. Thus we ſay, the branch of a family, the branch of an artery, the branch of a vein.

BRANCHES *of a Bridle*, in the manege, are two pieces of iron bended, which in the interval, between the one and the other, bear the bit-mouth, the croſs-chains, and the curb; ſo that on the one end they anſwer to the head-ſtall, and on the other to the reins, in order to keep the horſe's head in ſubjection.

It is to be obſerved, 1. That the farther the branch is from a horſe's neck, the more effect it will have. 2. That ſhort branches *cæteris paribus* are ruder, and their effects more ſudden than thoſe of longer. 3. That the branch is to be proportioned to the length of a horſe's neck; and one may ſooner err in chooſing one too ſhort than too long.

BRANCHES *of Ogives*, in architecture, the arches of Gothic vaults. Theſe arches traverſing from one angle to another diagonal-wiſe, form a croſs between the other arches, which make the ſides of the ſquare, of which the arches are diagonals.

BRANCHERY, in the anatomy of plants, denotes the ramifications of the ſucciferous veſſels diſperſed through the parenchyma, or pulpy parts of fruits.

BRANCHIÆ, GILLS, in the anatomy of fiſhes, the parts correſponding to the lungs of land-animals, by which fiſhes take in and throw out again a certain quantity of water, impregnated with air. All fiſhes, except the cetaceous ones and the petromyzum, are furniſhed with theſe organs of reſpiration; which are always eight in number, four on each ſide the throat; that next the heart is always the leaſt, the reſt increaſing in regular order as they ſtand near the head of the fiſh.

BRANCHIARUM FORAMINA, *Apertures of the Gills*. In moſt fiſhes there is only one aperture; in the cartilaginous ones, theſe apertures are ten in number, five on each ſide; and in the petromyzum or lamprey, there are no leſs than fourteen of theſe apertures, ſeven on each ſide. As to the cetaceous fiſhes, they have no aperture of this kind; and the reaſon ſeems to be, becauſe they are furniſhed with lungs.

BRANDY, a ſpirituous and inflammable liquor, extracted from wine and other liquors by diſtillation, which is moſt generally performed by the common alembic; but ſometimes alſo in balneum mariæ. See the article DISTILLATION.

The veſſels uſed in this operation are commonly of copper; ſome diſtillers, in order to cool the brandy, make the neck of the matraſs very long, and of a ſerpentine or winding figure, in order to its paſſing through a tub of cold water.

In order to diſtil brandy, they fill the cucurbit half full with the liquor they would extract it from, which they put over a moderate fire, till about the ſixth part of it be diſtilled, or till they perceive that what falls into the recipient, is no longer inflammable. Brandy diſtilled a ſecond time is called ſpirit of wine; and this ſpirit, purified again by one or by ſeveral diſtillations, is what they call ſpirit of wine rectified. With regard to brandy (we ſpeak only of that which is diſtilled from wine) they who trade in it, chooſe it white, clear, of a good taſte, and ſuch as will bear the teſt or proof; that is to ſay, that when poured into a glaſs it forms on the top of it a little white lather, which, as it diminiſhes, makes a circle; there being no brandy but that which is well dephlegmated, and does not retain too much humidity, wherein this bead-proof, as it is called, will be entirely formed.

The chief uſe of brandy is as a drink, particularly in the northern countries, among the negroes of Guinea, who will ſell one another for ſome bottles of brandy, and among the ſavages of Canada, who are extremely fond of it. Brandy is alſo uſed in medicine, to ſtrengthen the nerves; and in dyeing, rectified ſpirits of wine being reckoned by the dyers among the non-colouring drugs.

Method of colouring BRANDY. All brandies, when firſt made, are as clear as water, and grow higher coloured by long keeping; however, they are artfully made of any colour ſeveral ways. To make a light ſtraw-colour, uſe turmeric, or a little treacle: but the beſt way is to give it a colour or tincture with a little burnt ſugar, made to a conſiſtence; or ſyrup of elderberries may be uſed, which gives an admirable colour, and may be made deeper or lighter, according to the quantity you put in.

Beſides the brandy made of wine, there is ſome alſo made of beer, cyder, ſyrups, ſugar, molaſſes, fruit, grain, &c. however, theſe are not properly called brandy; but go under the general denomination of ſpirits. See RUM, ARRACK, &c.

Wine brandy made in France, is eſteemed the beſt in Europe. They make it wherever they make wine; and for that purpoſe, uſe wine that is pricked, rather than good wine. The chief brandies for foreign trade, and thoſe accounted beſt, are the brandies of Bourdeaux, Rochelle, Cogniac, Charenton, the iſle of Rhe, Orleans, the county of Blaſois, Poictou, Touraine, Anjou, Nantes, Burgundy, and Champaign.

BRASIL, or BRAZIL, in natural hiſtory, is a red wood, brought from the province of that name in South America. What differences there are in the trees we know not: the woods brought to us, differ little otherwiſe than as different parts of one log, ſome pieces being richer in colour than others. This wood is called, by Caſpar Bauhine, baſtard red-ſaunders, *Pſeudoſantalum rubrum ſive arbor Brazilia.* Many have confounded it with the true red-ſaunders; but however the two trees may be allied in their botanic characters, the woods, chemically conſidered, are very obviouſly different; Brazil wood readily giving out its red colour to water, whilſt ſaunders gives no red tinge to any aqueous liquor. The watery tincture of Brazil, however, is not quite ſo deep as that made in rectified ſpirit of wine, or in volatile alkaline ſpirits. The ſpirituous tincture ſtains warm marble of a purpliſh red, which, upon increaſing the heat, becomes violet. Mr. du Fay informs us, in a paper upon this ſubject in the French Memoirs, that if the ſtained marble be covered with wax, and conſiderably heated, it changes through all the ſhades of brown, and fixes at laſt in a chocolate colour. The colour of the watery decoction is heightened by alum, and inclined to a crimſon. A decoction made with alum, in the proportion of about one part of the ſalt to four of the wood, yields, upon adding alkaline ley or volatile ſpirits, a kind of crimſon lake verging a little to violet.

A tranſparent crimſon for water-colours is ſaid to be made by boiling the wood in ſmall wort, with a little tartar. A large proportion of tartar weakens the colour. All acids, if their quantity is conſiderable, have this effect: thoſe of the mineral kingdom totally deſtroy it.

Brazil wood dyes woollen of a red colour, which does not want beauty, but has little durability. Mr. Hellot gives a pretty remarkable proceſs, by which both the beauty and permanency of the dye are improved. He directs the wood, cut in ſmall pieces, to be boiled in two freſh parcels of the hardeſt well-water that can be procured; the decoctions to be mixed together, and kept in a caſk, till they ferment, grow ſtale, and appear ropy like an unctuous wine. The cloth is to be boiled for three hours with alum and tartar, in the proportion of ſix or eight ounces of the former, and two or leſs of the latter, to every pound, and afterwards kept moiſt, in a cool place, for eight or ten days, that it may be thoroughly penetrated by the ſalts. A quantity of the ſtale decoction of Brazil is made to boil in a copper, and ſome common coarſe ſtuff, prepared as uſual with alum and tartar, dyed in it: half as much more of the liquor is then added, and another piece of cloth dyed; ſo as that, between the two, about three fourths of the colour may be taken up. The cloth prepared as above is now to be dipped, and the liquor kept gently boiling, till it has taken the colour uniformly. The red, obtained by this proceſs, is a lively and durable demi-ſcarlet: on expoſure to the air for four months, in winter, it loſt nothing: but on the contrary became deeper, and ſeem to gain a body. The ſame author gives another method of fixing the colour of Brazil by aſtringents: the dyes thus produced are not red, but coffees and purple-cheſnuts, very beautiful and gloſſy: for this purpoſe he dilutes the ſtale decoction of Brazil with twice its quantity of water; and adds for every pound of cloth, about an ounce of powdered galls, and half an ounce of gum arabic. The cloth, prepared with alum and tartar, and kept moiſt for fifteen days, is boiled in this liquor, for an hour or two, according as the colour is wanted lighter or deeper, and ſuffered to grow thoroughly cold before it is waſhed.

* BRAZIL, or BRASIL, a country of South America, with the title of a principality, belonging to the preſumptive heir of the king of Portugal. Its greateſt breadth is ſeventeen degrees, it lying between thirty-five and ſixteen degrees of weſt longitude, which make about one thouſand miles; but along the coaſt, which is bordered with mountains, it is near two thouſand miles, in which there are many good ports and harbours, where ſhips may ride in ſafety.

Brazil was diſcovered by accident, in 1500, on the 24th of April, by Don Pedro Alvarez Cabral, who gave it the name of the Holy Croſs; and he being a Portugueſe, that nation has poſſeſſed it almoſt ever ſince; though ſome time after, the Dutch threw off the Spaniſh yoke, and became maſters of it, but were forced to leave it in 1655. The air of this country, though ſeated under the torrid zone, is indifferently mild and healthy, for people live there to an advanced age. The ſoil produces tobacco, cotton, Indian corn, and all ſorts of fruit, beſides ſugar-canes, which flouriſh there admirably well. The Portugueſe are ſettled on the coaſt of Brazil, the inland country being inhabited by ſavages of different nations. The Portugueſe have divided it into fourteen governments or captainſhips, three of which are towards the north, Para, Maragnan, and Siara, and eleven on the eaſt coaſt, from north to ſouth, namely, Rio Grande, Paraiba, Tamaraca, Fernambouc, Scregippe, the Bay of All Saints, Rio dos Ilheos, Porto Seguro, Porto de Spiritu Sancto, Rio Janeiro, and St. Vincent.

The natives called Toupinambous, by which you may judge of the reſt, are the ſize of the Europeans; they are a ſtrong healthy people; their ſkin is of a red colour, like the reſt of the Americans, but darker than thoſe of the north, on account of their nearneſs to the ſun. The men, women, and children go quite naked, and they have no hair on any part of their bodies, except the head. All the males have a hole bored through their under lips, in which they put a bit of bone as white as ivory, which ſtands out above an inch, and is ſecured by a broad head, which is placed between the lip and the gums; this is worn while they are very young; but when they are men grown, they change it for a green ſtone like an emerald; ſome have holes in their cheeks as well as lip, and adorn them in the ſame manner. In many parts of Brazil, they daub themſelves all over with a ſort of gum or balſam, and then roll themſelves in down and ſmall feathers, which gives them an odd frightful appearance. When the firſt colonies went over, they endeavoured to perſuade the women to cover their nakedneſs, but could never prevail on them, for which they gave this reaſon, that as they went into the water to bathe ſeveral times in a day, it would be too troubleſome to put any thing on and off, though never ſo ſlight. They have a beaſt not much unlike a cow, whoſe fleſh taſtes like beef, which they are very fond of; they likewiſe hunt a ſort of deer, and when they would preſerve a part of this or any other creature, they roaſt it thoroughly, for they never ſalt it, ſome keeping it at the fire twenty-four hours. The camel ſheep is another remarkable animal, which is to be met with in ſeveral parts of South America, even as as far as the Streights of Magellan; it is of the ſhape of a camel, but not ſo large, and has very fine wool, which is pretty long, and of the colour of dried roſes. There is a ſort of hog, which has different names in different places, but is moſt commonly known by the name of pecari, and has this very remarkable diſtinction, viz. the navel on its back. The agouti is a kind of hare, which partakes a good deal of the hog; it is of the ſize of a pig of two months old, with a head and body not unlike it, except the ſnout, which is not ſharp.

The beaſt called a tyger is brown, and very unlike thoſe of Europe. They have, properly ſpeaking, no ſuch animal as a lion. They have a ſort of deer, which are much leſs than ours, with hair as long as that of a goat, and ſmall horns. The pac, is a quadruped of the ſize of a hound, with an ugly head, and a fine ſkin, which is ſpotted with white, grey, and black; the fleſh eats like veal. There are rats as big as ſquirrels, and of the ſame colour, which taſte like rabbits. The opoſſum is an animal that has ſomething of the rat, and fox.

The ſluggard or ſloth, is about the bigneſs of a middle ſized fox, and is in length from the neck to the tail a little above a foot.

The different kinds of monkies are ſo numerous, that it would be a difficult matter to reckon them all up; ſome of them are as large as grey-hounds, and others as ſmall as rats.

Brazil produces great variety of plants and trees; the moſt uſeful is the root manioc, or mandioc, for of this they make their bread. There are ſeveral ſorts of it, but they all contain a poiſonous juice, which muſt be ſqueezed out before it is uſed. Ananas or pine-apples are now well known in theſe parts. They likewiſe have rice, Indian corn, potatoes, bananas, melons, pompions, water-melons, cucumbers, beans, figs, and many other vegetable productions brought from Europe. In ſhort, every part of Brazil is well ſtocked with variety of trees, inſomuch, that the firſt planters were forced by cutting to make a road through them, with incredible pains and charge. Brazil wood is very well known every where for its uſefulneſs in dying. The trunk of this tree is knotty, and two or three fathoms thick, and ſmells very agreeably. It is always ſtripped of its bark before it is ſold.

The gums, roſins, and balſams, in ſhort, all the juices which flow upon inciſion from divers ſort of trees, as well as the different oils extracted from thence, are not to be numbered. With regard to the religion of the Brazilians, we can ſay nothing, for they have no public aſſemblies on that account, and though they are called idolaters, we cannot find they have images of any pretended gods.

In their marriages they may take any relation except the mother's daughters and ſiſters. They uſe no manner of courtſhip, but only apply to the father or neareſt relation, and if he conſents, there needs no farther ceremony. They have as many wives as they pleaſe, who are employed in making hammocks, taking care of the garden, and planting roots. They live together in great harmony, there ſeeming to be no manner of jealouſy among them. This being the caſe, there can be little temptation to adultery on the man's part. As for the women, they may lie with who they will before they are married, without the leaſt blame. The men go to war, and employ themſelves in hunting and fiſhing; they make wooden ſwords, bows, arrows, and ornaments compoſed of feathers. When an Indian is dead, they bury him in about twelve hours, in a grave made round like a tun, having firſt wrapped him in his cotton hammock, placing him almoſt upright, with his bracelets and other trinkets. The women, when their huſband is dead, make a terrible noiſe, which they repeat as often as they ſee their graves.

BRASS, or, as the French term it, Yellow-Copper, is a factitious metal compoſed of copper and lapis calaminaris.

The method of preparing it is thus: The lapis, having been calcined and ground fine as flour, is mixed with fine charcoal, and incorporated, by means of water, into a maſs: this being done, about ſeven pounds of lapis calaminaris is put into a melting pot that will contain about a gallon, and over that about five pounds of copper; this pot is let down into a wind furnace, where it remains for eleven hours, in which time it is converted into braſs. The metal then is caſt, either into plates or lumps; forty-five pounds of crude lapis calaminaris will produce thirty pounds when calcined or burned. Sometimes braſs-ſhruff is uſed inſtead of copper; but that is not always to be procured in quantities ſufficient, it being no other than a collection of old braſs. Pure braſs is not malleable, unleſs when it is hot: for when it is cold it will break; and after it has been melted twice, it will no longer bear the hammer: but in order to render it capable of being wrought, they put ſeven pounds of lead to an hundred weight of braſs, which renders it more ſoft and pliable.

Braſs may be cleanſed, firſt, by rubbing it with a cloth dipped in equal quantities of aqua-fortis and common water; then with an oily cloth, and laſtly with a dry one dipped in lapis calaminaris.

Braſs is tinged of a gold colour, firſt, by burning, then diſſolving it in aqua-fortis, and, laſtly, reducing it to its metalline ſtate. It may be whitened by heating it red-hot, and quenching it in water diſtilled from ſal ammoniac and egg-ſhell. It is ſilvered, or coloured ſuperficially white, by rubbing it with balls made of ſilver diſſolved in aqua-fortis, with powder of white tartar, ſufficient to abſorb all the moiſture thereof.

Corinthian BRASS which has been famous in antiquity, is a mixture of gold, ſilver, and copper. L. Mummius having ſacked and burned the city of Corinth, 146 years before Chriſt, it is ſaid this metal was formed from the immenſe quantities of gold, ſilver, and copper, wherewith that city abounded, thus melted and run together by the violence of the conflagration.

BRASS-COLOUR, one prepared by the braziers and colourmen to imitate braſs. There are two ſorts of it, the red braſs, or bronze, and the yellow or gilt braſs; the latter is made only of copper-filings, the ſmalleſt and brighteſt that can be found; with the former they mix ſome red ochre, finely pulverized; they are both uſed with varniſh.

BRASSICA, Cabbage, in botany. See Cabbage.

BRAULS, Indian cloths with blue and white ſtripes. They are otherwiſe called turbans, becauſe they ſerve to cover thoſe ornaments of the head, particularly on the coaſt of Africa.

BRAWN, the fleſh of a boar ſouſed or pickled; for which the boar ſhould be old, becauſe the older he is, the more horny will the brawn be.

The method of preparing brawn is thus: the boar being killed, it is the flitches only, without the legs, that are made brawn; the bones of which are to be taken out, and then the fleſh ſprinkled with ſalt, and laid in a tray, that the blood may drain off: then it is to be ſalted a little, and rolled up as hard as poſſible. The length of the collar of brawn ſhould be as much as one ſide of the boar will bear; ſo that when rolled up, it will be nine or ten inches diameter.

The collar being thus rolled up, it is to be boiled in a copper, or large kettle, till it is ſo tender that you can run a ſtraw through it; then ſet it by, till it is thorough

rough cold, and put into the following pickle. To every gallon of water, put a handful or two of ſalt, and as much wheat bran: boil them together, then drain the bran as clear as you can from the liquor; and when the liquor is quite cold, put the brawn into it.

BRAZIER, an artificer who makes and ſells copper and braſs veſſels.

BRAZING, the ſoldering or joining two pieces of iron together, with thin plates of braſs, melted between the pieces that are to be joined. If the work be very fine, as when two leaves of a broken ſaw are to be brazed together, they cover it with pulverized borax, melted with water, that it may incorporate with the braſs powder, which is added to it: the piece is then expoſed to the fire without touching the coals, and heated till the braſs is ſeen to run.

BRAZING is alſo the joining two pieces of iron together by heating them hot, the one upon the other, which is uſed for large pieces by farriers, &c.

BREACH, in fortification, a gap made in any part of the works of a town by the cannon or mines of the beſiegers, in order to make an attack upon the place. A practical breach is that where men may mount, and make a lodgment, and ought to be fifteen or twenty feet wide.

BREACH, in a legal ſenſe, is where one breaks through the conditions of a bond or covenant, or an action upon which the breach muſt be aſſigned.

BREAD, *Panis*, a maſs of dough kneaded and baked in an oven. We find bread ſometimes made of rye, of oats, and of barley; but that prepared from wheat is by far the moſt wholeſome. In ſeveral parts of Aſia, Africa, and America, they make bread of maize, or Indian corn; and in ſome parts the Americans make bread of the caſſava root.

BREADTH, in geometry, one of three dimenſions of bodies, and which, multiplied into the length, produces a ſurface.

BREAKERS, the waves that break over rocks or ſhallows lying immediately under the ſurface of the water. If a ſhip is driven among breakers, it is almoſt impoſſible to ſave her from being wrecked, as every billow lifts her up and daſhes her bottom with additional force upon the rocks or ſands.

BREAKING-BULK, in naval affairs, beginning to unload the cargo.

BREAM, *Brama*, in ichthyology, a fiſh, of which there are two ſorts, one found in the freſh, and the other in the ſalt water. The former is the cyprinus, and has all its fins black; and the latter the reddiſh ſparus, having eleven parallel and gold-coloured lines on each ſide.

BREAMING, in naval affairs, the burning the graſs, ooze, or ſhells, from off a ſhip's bottom, with furze or faggots. See CAREEN and DOCK.

BREAST, *Pectus*, in anatomy, the fore part of the thorax. See THORAX.

BREASTS, *Mammæ*, in anatomy. See MAMMÆ.

BREAST-HOOKS, in naval architecture, ſtrong pieces of crooked timber bolted acroſs the ſtem, and fayed to the inſide of a ſhip's bows, to fortify the forepart.

BREAST-PLATE, in antiquity, a piece of armour worn to defend the breaſt, originally made of hides, or hemp twiſted; but afterwards made of braſs, iron, or other metals, which were ſometimes ſo exquiſitely hardened, as to be proof againſt the greateſt force.

* BRECKNOCK, or BRECON, a town, the capital of the county of Brecknockſhire, with two markets, on Wedneſdays and Saturdays, and four fairs, on May 4, July 5, September 10, and November 17, for leather, hops, cattle, and all ſorts of commodities. It is ſeated at the confluence of the rivers Hondy and Uſk. It is an ancient place, containing three churches, one of which is collegiate, and is ſeated at the weſt end of the town. The houſes are well built. Here was formerly a ſtately caſtle, and a ſtrong wall, through which there were three gates, that are all demoliſhed. It is governed by two bailiffs, a recorder, fifteen aldermen, two chamberlains, a town-clerk, two conſtables, and two ſerjeants at mace, and ſends one member to parliament. It is well inhabited. The markets are well ſupplied with cattle, corn, and proviſions. It is thirty-four miles north-weſt-by-weſt of Monmouth, and one hundred ſixty-three from London. Long. 3. 15. W. Lat. 52. 0. N.

* BRECKNOCHSHIRE, is bounded by Radnorſhire on the north, Cardiganſhire and Caermarthenſhire on the weſt, Herefordſhire and Monmouthſhire on the eaſt, and by Glamorganſhire and Monmouthſhire on the ſouth. It is thirty-five miles in length, thirty in breadth, and about an hundred in circumference. It is ſurrounded with hills, which render the air in the vallies pretty temperate. The ſoil on the hills is very ſtoney, but the

ſtreams deſcending from thence into the vallies render them fruitful both in corn and graſs. The chief commodities here are corn, cattle, fiſh, and otter's fur, beſides manufactures of cloth and ſtockings. The principal rivers are the Uſk, the Wye, and the Yrvon. The chief towns are Brecknock, Bealt, and Hay.

BREAST-PLOUGH, a plough ſo faſhioned that a man may ſhove it before him.

BREAST-WORK. See Parapet.

BREECH *of a great Gun*, or *Cannon*, the end next the touch-hole.

BREECHING, in ſea-gunnery, a rope whoſe middle part being faſtened to the breech or pomellion of a piece of ordnance, the two ends are paſſed through ring-bolts on each ſide of the carriage, and afterwards faſtened to other ring-bolts in the ſhip's ſide. It is uſed to ſecure the cannon in time of engagement, and prevent them from recoiling too much. Pomellion is the ſame thing amongſt ſeamen, that caſcabel is with engineers, the hindmoſt knob on the breech of a cannon.

BREEZE, a ſhifting wind that blows from ſea or land for ſome certain hours in the day or night; common in Africa, and ſome parts of the Eaſt and Weſt Indies. The ſea breeze is only ſenſible near the coaſts; it commonly riſes in the morning, about nine, proceeding ſlowly in a fine ſmall black curl on the water, towards the ſhore; it increaſes gradually till twelve, and dies about five. Upon its ceaſing, the land breeze commences, which increaſes till twelve at night, and is ſucceeded in the morning by the ſea-breeze again.

BRENT-GOOSE, a ſpecies of gooſe with a black neck and a white collar round; uſually confounded with the barnacle, tho' in reality a diſtinct ſpecies.

BREST, or BREAST, in architecture, a term ſometimes uſed for the member of a column, more uſually called torus. See Torus.

* BREST, a maritime town in Lower Brittany, in France, is ſeated on the declivity of a hill on the ſide of its port, which is the largeſt in the kingdom, and will hold five hundred ſhips at a time. There is an arſenal with ſea-ſtores, which was placed there on account of its nearneſs to the woods, mines of iron, and other things proper for the building of ſhips. It was entirely conſumed by fire, in 1744, which was an irreparable loſs to France. The entrance into the port is guarded by a ſtrong caſtle, ſeated on a rock, which cannot be attempted on the ſea-ſide, becauſe it is craggy, and defended on the land ſide by a large ditch and other fortifications.

The ſtreets of Breſt are very narrow. A great quay ſurrounds this ſide of the port, which is above a mile in length, and two hundred paces broad; there are magazines on the quay, full of all foreign merchandizes. On the other ſide of the port, the fine church of Notre Dame is ſeated; and in a ſuburb, which is as big as half the city, there is a ſtrong tower, oppoſite the caſtle, at the entrance of the port; there is alſo a great quay on this ſide, bordered with large magazines, partly within the rock, which has been cut away to enlarge the place; theſe are extended almoſt as far as the bottom of the harbour, where there are two docks, very commodious for the building of large ſhips; the ſhops and houſes of the workmen are all round them. The Engliſh attempted to take poſſeſſion of this harbour in 1694, but were diſappointed. It is thirty miles ſouth-weſt of Morlaix, and three hundred and twenty-three weſt of Paris. Lon. 4. 26. W. Lat. 48. 23. N.

* BRETON (CAPE) an iſland in North America, the chief place of which is Louiſburg. It is ſeparated from Nova Scotia by the narrow ſtreight of Canſo. It is one hundred and ſeventeen miles long, and ſeventy-five broad, and is full of lakes; it is a barren place, being covered with ſnow in winter, and ſubject to great fogs in ſummer; however, it is of importance, as it in ſome meaſure commands the navigation of the river St. Lawrence, and is uſeful to thoſe who go to fiſh for cod; it has ſeveral good harbours, and the fiſhery on the coaſt is very good. It was taken from the French in 1743, and reſtored to them again, by the treaty of Aix-la-Chapelle, in 1748; and it was again taken by the Engliſh, on July 29, 1758, when the whole garriſon, conſiſting of five thouſand ſix hundred men, were made priſoners of war; there were eleven men of war in the harbour, which were either taken, ſunk, or deſtroyed. It is ſeated between forty-five and forty-ſeven degrees of latitude.

BREVE, in law, any writ directed to the chancellor, judges, ſheriffs, or other officers, whereby a perſon is ſummoned, or attached, to anſwer in the king's courts, &c.

BREVE PERQUIRERE, the purchaſing of a writ or licence for trial in the king's courts: whence comes the preſent uſage of paying ſix ſhillings and eight-pence fine to the king in ſuit, for money due on bond, where the debt is forty pounds, and of ten ſhillings where it is a hundred pounds, &c.

BREVE DE RECTO, a writ of right, or licence, for a perſon ejected to ſue for the poſſeſſion of the eſtate detained from him.

BREVET, in the French cuſtoms, denotes the grant of ſome favour or donation from the king, in which ſenſe it partly anſwers to our warrant, and partly to letters patent.

BREVIARY, a daily office in the Romiſh Church. It is compoſed of matins, lauds, firſt, third, ſixth, and ninth veſpers, and the compline or poſt communio. The breviary of Rome is general, and may be uſed in all places; but on the model of this, various others have been built, appropriated to each dioceſe, and each order religious.

The inſtitution of the breviary is not very ancient: there have been inſerted in it the lives of the ſaints, full of ridiculous and ill atteſted ſtories, which gave occaſion to ſeveral reformations of it, by ſeveral councils, particularly thoſe of Trent and Cologn, by ſeveral popes, particularly Pius V. Clement VIII. and Urban VIII. alſo by ſeveral cardinals and biſhops, each lopping off ſome extravagancies, and bringing it nearer to the ſimplicity of the primitive offices.

BREVIBUS A ROTULIS LIBERANDIS, a writ to a ſheriff, to deliver to his ſucceſſor, the county, with the appurtenances, and the rolls, writs, and other things to his office belonging.

BREVIERE, a ſmall kind of type, or letter, on which this dictionary is printed.

BREVIS, in anatomy, an appellation given to ſeveral muſcles, on account of their ſhortneſs.

BREW-HOUSE, a building adapted to the brewing, &c. of malt-liquors.

In order to erect a large and public brew-houſe to the beſt advantage, ſeveral circumſtances ſhould be carefully obſerved. 1. That three ſides in four of the upper-part, or ſecond floor, be built with wooden battons about three inches broad, and two thick, that a ſufficient quantity of air may be admitted to the backs or coolers. 2. That the coppers be erected of a proper height above the maſhing-ſtage, that the hot-water may be conveyed by means of cocks into the maſh-tuns, and the worts into the coolers. 3. That the fire-places of the coppers be very near each other, that one ſtoker, or perſon who looks after the fire, may attend all. 4. That the yard for coals be as near as poſſible to the fire-places of the copper. 5. That the malt be ground near the maſh-tuns, and the mill erected high enough that the malt may be conveyed from the mill immediately into the maſh-tuns, by means of a ſquare wooden ſpout or gutter. 6. That the upper backs be not erected above thirty-three feet above the reſervoir of water, that being the greateſt height water can be raiſed by means of a common ſingle pump. 7. That the pumps which raiſe the water, or liquor, as the brewers call it, out of the reſervoir into the water backs, and alſo thoſe which raiſe the worts out of the jack-back into the coppers, be placed ſo that they may be worked by the horſe-mill which grinds the malt.

BREWING, the operation of preparing ale or beer from malt; the uſual proceſs is as follows: the ingredients being ready, the water muſt be made to boil very ſpeedily, and while boiling with the greateſt violence the fire muſt be immediately damped, or put out; when the height of the ſteam is over, the water is put into the maſhing-tub to wet the malt; then ſo much being poured out as to make it of a conſiſtence ſtiff enough to be rowed up, let it ſtand thus a quarter of an hour, after which another quantity of the water is added, and rowed up as before; at laſt the full quantity of water is poured upon it, and that in proportion as the liquor is intended to be ſtrong or weak: this part of the operation is called maſhing. Afterwards the whole may be left to ſtand two or three hours, more or leſs, according to the ſtrength of the wort, or the difference of the weather; then let it run into the receiver, and maſh again for a ſecond wort in the ſame manner as for the firſt, only the water muſt be cooler, and muſt not ſtand above half the time.

The two worts being mixed together, the quantity of hops that is deſigned may be added thereto, and the liquor put into the copper, which being cloſely covered up, let it boil gently for the ſpace of an hour or two; then let the liquor into the receiver, and the hops ſtrained from it into the coolers.

When cool, the yeaſt is applied; which done, it is left to work or ferment, till it be fit to tun up.

For ſmall beer there muſt be a third maſhing; the water muſt be near cold, and to ſtand not above three quarters of an hour; to be hopped and boiled at diſcretion.

For double ale, or beer, the two liquors coming from the two firſt maſhings muſt be uſed as liquor for a third maſhing of freſh malt. For fine ale, the liquor thus brewed is farther prepared with molaſſes: inſtead of yeaſt, or baum, ſome uſe Caſtile ſoap, others flour and eggs, others an eſſential oil of barley, others a quinteſſence of malt, others of wine, and others the ſal panariſtus.

BREYNIA, in botany, a genus of plants, whoſe corolla conſiſts of four oval patent petals, and is ſomewhat larger than the cup: the fruit is a very long, fleſhy, clavated, ſoft pod, formed of two valves, and containing only one cell: the ſeeds are numerous, kidney-ſhaped, fleſhy, and arranged longitudinally in the pod.

BRIAR, or BRIAR BUSH, the wild roſe. See ROSE.

* BRIAREUS, in fabulous hiſtory, the ſon of Titan, Æther, or Cœlus, and Terra, a giant, who, according to Homer, was called Ægeon by men and Briareus by the Gods. He is repreſented as having fifty heads, breathing fire, and an hundred hands. He defended Jupiter, when Pallas, Juno, and Neptune, with the reſt of the Gods, attempted to dethrone him; but afterwards conſpiring, with the reſt of his gigantic brethren, againſt Jupiter, that God flung him down, and then threw mount Ætna upon him, which, as often as he moves, caſts forth fire.

BRIBERY, in common law, is the receiving a gift or reward of any perſon who has buſineſs before him, for his doing his office, or by colour of his office, except the king only; unleſs it be meat and drink.

BRIBERY is puniſhable by fine and impriſonment, and the loſs of office; and in a judge it is deemed ſo heinous, that anciently it was puniſhed as treaſon. Judges ſervants are puniſhable for receiving bribes: and if any judge refuſe a bribe offered him, the perſon that offered it may be puniſhed. Officers of the cuſtoms taking any bribe, whereby the crown may be defrauded, forfeit 100l. Candidates for a ſeat in parliament, that bribe electors, after the teſt of writs of election, &c. are diſabled to ſerve in parliament; as are likewiſe ſuch electors, to vote, and to hold any office, and ſhall forfeit 500l. &c.

BRICK, a fat reddiſh earth, formed into long ſquares, four inches broad, and eight or nine long, by means of a wooden mould, and then baked or burnt in a kiln, to ſerve the purpoſes of building.

Bricks are of great antiquity, as appears by the ſacred writings, the tower and walls of Babylon being built with them. In the Eaſt they baked their bricks in the ſun; the Romans uſed them unburnt, only leaving them to dry for four or five years in the air.

Of the Matter whereof BRICKS *are made.* Pliny ſays, that to make good bricks they muſt not conſiſt of any earth that is full of ſand or gravel, nor of ſuch as is gritty or ſtony; but of a greyiſh marl, or whitiſh chalky clay, or at leaſt of a reddiſh earth: he alſo adds, that the beſt ſeaſon for making bricks is the ſpring, becauſe, if made in ſummer, they will be ſubject to crack, and be full of chinks. He directs, that the loam of which bricks are made, be well ſteeped and wrought with water.

About London they chiefly burn in clamps, built of the bricks themſelves, after the manner of arches in kilns, with a vacancy between each brick, for the fire to play through; but with this difference, that inſtead of arching, they ſpan it over by making the bricks project one over another, on both ſides of the place, for the wood and coals to lie in till they meet, and are bounded by the bricks at the top, which cloſe all up. The place for the fuel is carried up ſtraight on both ſides, till about three feet high; then they almoſt fill it up with wood, and over that lay a covering of ſea-coal, and then overſpan the arch; but they ſtrew ſea-coal alſo over the clamp betwixt all the rows of bricks: laſtly, they kindle the wood which gives fire to the coal, and when all is burnt, they then conclude the bricks are ſufficiently burnt.

BRICK-MAKING, the art of making and burning bricks.

BRICKLAYER, one who lays bricks in the building of walls, houſes, &c.

Tilers and bricklayers were incorporated 10 Eliz. under the name of maſter and wardens of the ſociety of freemen of the myſtery and art of tilers and bricklayers.

BRIDGE, an edifice either of ſtone or timber, conſiſting of one or more arches erected over a river, or the like, for the conveniency of paſſing over.

The parts of a bridge are the piers, or legs, pilæ; the arches; the pavement, or way over for cattle and carriages, the foot-banks on each ſide for foot paſſengers; the rail or parapet which incloſes the whole; and the butments, or ends of the bridge on the banks.

Bridges are a ſort of edifices very difficult to execute, on account of the inconvenience of laying foundations, and walling under water.

The conditions required in them are, that they be well-deſigned, commodious, durable, and ſuitably decorated. The piers of ſtone bridges are to be equal in number, that there may be one arch in the middle, where commonly the current is ſtrongeſt: their thickneſs is not to be leſs than a ſixth part of the ſpan of the arch, nor more than a fourth. They are commonly guarded in front with an angular ſterling, or ſpur, to break the force of the current, though this defence is ſometimes alſo turned ſemicircularly: in the ancient bridges it is always a right angle, which has the advantage of being ſtronger and more durable than acute ones. The ſtrongeſt arches are thoſe whoſe ſweep is a complete ſemicircle; as for the rails, the height, ornament and the like, they are left to diſcretion.

In the bridges of Avignon, St. Eſprit, and Lions, there is this remarkable, that they are not ſtraight, eſpecially the two former, but bent, having an angle, whoſe convexity is turned towards the ſtream to break the force thereof: the bridge of St. Eſprit, Dr. Robinſon obſerves, is bowed in many places, making unequal angles, eſpecially in thoſe parts where the ſtream is ſtrongeſt.

The famous bridge of Venice called the Rialto, conſiſts but of a ſingle arch, and that a flat or low one, paſſing for a maſter-piece of art, being built in 1591, after the deſign of Michael Angelo: the ſpan of the arch is ninety-eight feet and a half, and its height above the water only twenty-three feet.—Poulet alſo mentions a bridge of a ſingle arch in the city of Munſter in Bothnia, much bolder than that of the Rialto at Venice. But theſe are nothing to a bridge in China, built from one mountain to another, conſiſting of one ſingle arch, 400 cubits long, and 500 cubits high, whence it is called the flying bridge: a figure of it is given in the Philoſophical Tranſactions. Kircher alſo ſpeaks of a bridge in the ſame country 360 perches long without any arch, ſupported only by 300 pillars.

Among all the bridges of the ancients, that built by Trajan over the Danube is allowed to be the grandeſt. It was compoſed of twenty arches of an hundred and fifty feet in height, and their opening from one pile, or pier, to another was one hundred and ſixty feet. The piers of this fine bridge are ſtill to be ſeen in the middle of the Danube. It was erected between Servia and Moldavia, a little above Nicopolis.

Wooden BRIDGES, called by the Latins, *pontes ſublicii*, conſiſt of beams and joiſts, ſuſtained by punchions, well cramped and bound together.

M. Couplet gives the ſtructure of a portable bridge, 200 feet long, eaſily taken aſunder and put together again, and which forty men may carry. Vide Du Hamel, *Hiſt. Reg. Acad. Scienc.* l. 3. § 5. c. 4. p. 273. Frezier ſpeaks of a wonderful kind of bridge at Apurima in Lima, made of ropes, formed of the bark of a tree. Vid. Frez. *Voyag. South Sea*, p. 184.

Dr. Wallis gives the deſign of a timber-bridge, ſeventy-feet long, without any pillars, which may be uſeful in ſome places where pillars cannot be conveniently erected. *Philoſ. Tranſ.* No. 163. p. 714.

Dr. Plot aſſures us, that there was formerly a large bridge over the caſtle-ditch at Tutbury in Staffordſhire, made of pieces of timber, none much above a yard long, and yet not ſupported underneath, either with pillars or arch-work, or any ſort of prop whatever. Vide Plot, *Nat. Hiſt. Stafford.* c. 9. § 88. p. 383.

Draw-BRIDGE, *Pons Subductarius*, one made faſt only at one end with hinges, ſo that the other end may be lifted up; in which caſe the bridge ſtands upright, to prevent the paſſage of either ditch or moat.

There are others made to draw back to hinder the paſſage, and to thruſt over again to afford a paſſage; and others, which open in the middle, half of which turns away to one ſide, and the other half to the other; being joined again at pleaſure: but they have this inconvenience, that one half of them remains on the enemy's ſide.

Flying-BRIDGE, *Pont volant*, or *Pons ductarius*, an appellation given to a bridge made of pontoons, leather boats, hollow beams, caſks, or the like, laid on a river, and covered with planks, for the paſſage of an army.

Flying-BRIDGE, *Pont volant*, more particularly denotes a bridge compoſed of one or two boats joined together by a ſort of of flooring, and ſurrounded with a rail, or balluſtrade; having alſo one or more maſts, to which is faſtened a cable, ſupported, at proper diſtances, by boats, and extended to an anchor, to which the other end is faſtened, in the middle of the water: by which contrivance, the bridge becomes moveable, like a pendulum, from one ſide of the river to the other, without any other help than the rudder. Such bridges ſometimes alſo conſiſt of two ſtories, for the quicker paſſage of a great number of men, or that both infantry and cavalry may paſs at the ſame time.

Flying, or *Floating*-BRIDGE, is ordinarily made of two ſmall bridges, laid one over the other, in ſuch manner, as that the uppermoſt ſtretches and runs out, by the help of certain cords running through pullies placed along the ſides of the under-bridge, which puſh it forwards till the end of it joins the place it is deſigned to be fixt on. When theſe two bridges are ſtretched out to their full length, ſo that the two middle ends meet, they are not to be above four or five fathoms long; becauſe, if longer, they will break.

BRIDGE *of Communication*, a bridge made over a river, by which two armies, or forts, ſeparated by the river, have a free communication with each other.

BRIDGES *of Boats*, are either made of copper or wooden boats, faſtened with ſtakes, or anchors, and laid over with planks. One of the moſt notable exploits of Julius Cæſar was the expeditious making a bridge of boats over the Rhine.

There are fine bridges of boats at Beaucaire and Rouen, which riſe and fall with the water, and one at Seville is ſaid to exceed them both.

The bridge of boats at Rouen, built in lieu of the ſtately ſtone bridge erected there by the Romans, is repreſented by a modern writer as the wonder of the preſent age. It always floats, and riſes and falls with the tide, or as the land-waters fill the river. It is near 300 yards long, and is paved with ſtone, juſt as the ſtreets are; carriages with the greateſt burdens go over it with eaſe, and men and horſes with ſafety, though there are no rails on either hand. The boats are very firm, and well moored with ſtrong chains, and the whole well looked after, and conſtantly repaired, though now very old.

BRIDGE, in gunnery, the two pieces of timber which go between the two tranſums of a gun-carriage, on which the bed reſts.

BRIDGE, in muſic, a term for that part of ſtringed inſtruments over which the ſtrings are ſtretched.

* BRIDGE-TOWN, the capital of the iſland of Barbadoes, the fineſt in all the Caribbee iſlands. It ſtands in the inmoſt part of Carliſle bay, which is large enough to contain five hundred ſhips. It is ſeated at the entrance of St. George's valley, which runs ſeveral miles into the country. The houſes are about one thouſand two hundred, with glazed windows, and the ſtreets are broad. The wharfs and quays are very neat and convenient, and there are ſeveral forts, as well as a magazine, built of ſtone, where the ſtores of the iſland are kept. The church is large, and has a noble organ, a good ring of bells, and a clock. There are large taverns and eating-houſes, with a poſt-houſe, on account of a monthly packet boat, ſettled between this place and England. The militia of this town and St. Michael's precinct, conſiſt of one thouſand two hundred men, called the royal regiment of foot guards. It is the ſeat of the governor, council, aſſembly, and court of chancery. But the governor's houſe is about a mile north-eaſt of the town. The town is very rich, the inhabitants polite, and there are plenty of ingenious artificers of every kind. Long. 61. 0. W. Lat. 13. 0. N.

* BRIDGNORTH, a town in Shropſhire, it has a market on Saturdays, and four fairs; on Thurſday before Shrove-Tueſday, for horned cattle, &c. on June 30 for the ſame, and great quantities of ſheep's wool; on Auguſt the 2d for the ſame, and lamb's wool; and on October 29 for horned cattle, horſes, ſheep, ſalt, butter and cheeſe. It is ſeated on the Severn, which divides it; but it is united by a handſome ſtone bridge, and theſe are called the Upper and Lower town. Robert de Belizma, ſon of Robert de Montgomery, built the caſtle here, and maintained it againſt king Henry I. by which means it was forfeited to the crown, and remained ſo till the reign of Richard III. who gave it to John Sutton, lord Dudley.

This town has undergone ſeveral ſieges, and in the civil war, ſuffered very much, the whole town being almoſt deſtroyed by fire, when Sir Lewis Kirke defended the citadel for king Charles. There are now no other remains of the caſtle than a ſmall part of one of the towers, and a place yet called the caſtle, within the walls of the old one; within which, ſtands one of the churches, dedicated to St. Mary Magdalen, which was made a free chapel, and exempted from epiſcopal juriſdiction. The other church is at the north end of the town, on the higheſt part of the hill, near to whoſe church-yard ſtood a college, which was deſtroyed by fire in the civil wars, together with the church juſt mentioned; which has been ſince rebuilt by the inhabitants. On the weſt bank of the river are the remains of an ancient and magnificent convent. It is governed by two bailiffs who are elected yearly, out of the twenty-four aldermen, by a jury of fourteen, twelve of whom muſt agree in their choice. It has alſo forty-eight common council men, and a recorder, town-clerk, and ſub-officers. It is fourteen miles north-weſt of Kidderminſter, and one hundred and forty north-weſt of London.

* BRIDGWATER, a borough town in Somerſetſhire, governed by a mayor, a recorder, two bailiffs, two aldermen, and twenty-four common council men. It ſends two members to parliament; and has two markets, on Thurſdays and Saturdays; with four fairs, on the ſecond Thurſday in Lent, June 24, September 21, and December 28, for cattle and all ſorts of goods. It has a handſome church, and a bridge over the river Parret, near which ſhips of an hundred tons burthen may ride. It is twenty-four miles weſt-ſouth-weſt of Wells, and one hundred and forty-three weſt-by-ſouth of London. Long. 2. 54. W. Lat. 51. 15. N.

BRIDLE, in the manege, a contrivance made of thongs of leather, and pieces of iron, to keep a horſe in ſubjection and obedience.

The ſeveral parts of a bridle are, the bit, or ſnaffle; the head-ſtall, or leathers from the top of the head to the rings of the bit; the fillet, over the forehead and under the fore-top; the throat-band, which buttons from the head-band under the throat; the reins, or long thongs of leather, that come from the rings of the bit, and, being caſt over the horſe's head, the rider holds them in his hand; the noſe-band, going through loops at the back of the head-ſtall, and buckled under the cheeks; the trench; the caveſan; the martingal; and the chaff-halter.

BRIDLE-*Hand* is the horſeman's left-hand, the right-hand being the ſpear or ſword-hand.

BRIDLE, *Frænum*, in anatomy. See FRÆNUM.

BRIDLES, in naval affairs, the upper part of the moorings, provided to ride ſhips or veſſels of war in the king's harbours: they conſiſt of one or more pieces of cable, whoſe upper-ends are only of a ſufficient length to be drawn into the fore-part of the ſhip, and faſtened; the lower parts are generally chains linked to anchors, which are ſunk for that purpoſe, and always remain in the bottom.

* BRIDPORT, a town in Dorſetſhire, that has a market on Saturdays, and three fairs, on April 5, for bullocks and ſheep; and on April 10, for pedlars ware and cattle. It is between two rivers. It is a corporation, governed by two bailiffs, thirteen other burgeſſes, a recorder, town-clerk, and two ſerjeants at mace. The two bailiffs, and thoſe for the preceding year, and recorder are ſole juſtices of the peace within the borough. It ſends two members, who are choſen by the inhabitants who are houſekeepers. It is celebrated for making of ropes and cables for ſhipping. It is fourteen miles weſt of Dorcheſter, and one hundred and thirty-nine weſt-by-ſouth of London. Long. 3. 0. W. Lat. 50. 40. N.

BRIEF, in common law, a writ whereby a man is ſummoned or attached to anſwer any action.

It is called brief becauſe it is couched in a few words, without any preamble.

BRIEF, a writing iſſued out of any of the king's courts of record at Weſtminſter, whereby ſome thing is commanded to be done, in order to juſtice, or the execution of the king's command.

BRIEF is alſo taken for a letter-patent, granting a licence to a ſubject to make a collection for any public or private loſs, as briefs for loſs by fire, or building churches, to be read by miniſters in churches, &c.

BRIEF, an abridgement of a client's caſe, wrote out for the inſtruction of council, on a trial at law.

Apoſtolical BRIEFS, letters which the pope diſpatches to princes or other magiſtrates, relating to any public affair.

BRIG, or BRIGANTINE, a ſmall merchant ſhip of two maſts, whoſe main ſail, inſtead of hanging acroſs the line of her length to a parallel yard, is ſpread fore and aft.

The term brigantine is variouſly applied by ſeamen of different countries in Europe to ſome particular ſpecies of veſſels of their own marine.

BRIGADE, a military term, a party or diviſion of a body of ſoldiers, whether horſe or foot, under the command of a brigadier.

An army is divided into brigades of foot: a brigade of horſe is a body of eight or ten ſquadrons; a brigade of foot conſiſts of four, five, or ſix battalions.

BRIGADE-MAJOR, an officer appointed by the brigadier, to aſſiſt him in the management and ordering of his brigade.

BRIGADIER, the general officer who has the command of a brigade. The eldeſt colonels are generally advanced to this poſt. He that is upon duty is brigadier of the day. They march at the head of their own brigades, and are allowed a ſerjeant and ten men of their own brigade for their guard.

BRILLIANT, in a general ſenſe, ſomething that has a lucid and bright appearance.

BRILLIANT *Diamonds*. See DIAMOND.

BRIMSTONE, in natural hiſtory. See SULPHUR.

BRINE, water replete with ſaline particles; or pickle. See the article SALT.

* **BRISTOL**, a city and ſea-port town, which ſtands partly in Glouceſterſhire, and partly in Somerſetſhire, though independent on both, it being a county of itſelf. It is generally eſteemed the ſecond city in England, for trade, wealth, and number of inhabitants, and is ſeated on the rivers Avon and Frome. The former runs through the city, and has a large ſtone bridge built over it, conſiſting of four arches, with houſes built on it on each ſide. The quay or key is on the Frome, over which there is a draw-bridge for the conveniency of ſhips coming up to load and unload, which is very convenient. A little below this the Frome falls into the Avon. The ſtreets are numerous, thoſe in the city are built very cloſe, and thoſe on the out parts are ſpacious. The goods are carried upon ſledges which renders the ſtreets very ſlippery. The College Green, which is ſeparated from the city, is a very agreeable elegant place, and being on high ground, overlooks the city; in it there is a ſtately high croſs, which is a fine Gothic ſtructure, with the effigies of ſeveral kings of England all round it. The cathedral is ſeated here, which is a fine Gothic ſtructure, beſides eighteen pariſh churches. There are likewiſe ſeveral meeting-houſes for Proteſtant diſſenters. They have lately had a fine exchange built, in the room of the tholſel, where the merchants uſed to meet. Queen's ſquare is a very handſome ſpacious place, and has the ſtatue of king William on horſeback in the middle. Beſides thoſe, there are hoſpitals, charity ſchools, &c. It is governed by a mayor, twelve aldermen, two ſheriffs, and twenty-two common council-men, and ſends two members to parliament.

The hot well, a little diſtance from the city, is a place of great reſort. In St. Vincent's rock, near the river Avon, tranſparent ſtones are found, harder than chryſtal, and ſofter than diamonds, well known by the name of Briſtol ſtones. There are hackney coaches to be had at Briſtol on any occaſion, but they do not ſtand in the ſtreets to be hired, as in London. They have a great fair on St. James's day, which is frequented by tradeſmen from all parts of the kingdom. They have alſo another on January 25, for moſt ſort of goods. It has a market on Wedneſday, Friday, and Saturday. The number of houſes are reckoned at nine thouſand, and the inhabitants at ſeventy thouſand. It is a biſhop's ſee, created ſince the diſſolution of the monaſteries. It is fifty-one miles ſouth of Hereford, ſixty-eight weſt-by-ſouth of Oxford, and one hundred and ſeventeen weſt of London. Long. 2. 40. W. Lat. 51. 27. N.

BRISTOL-WATER. Theſe waters are the fourth in degree amongſt the waters which are eſteemed warm. The waters of Bath are the firſt, Buxton the ſecond, and Matlock the third. Bath waters are beneficial, when the ſecretions from the blood are diminiſhed; Briſtol when too much increaſed; both attenuates powerfully; Briſtol incraſſates: Bath is ſpirituous, and helps defects; Briſtol is more cooling, and ſuppreſſes plenitude, with its conſequences, inflammations and hæmorrhages. If we may judge of the contents of Briſtol waters, from their effects, which are exceedingly deterſive and healing, they partake chiefly of chalk, lapis calcarius, and calaminaris, the virtues of which are too dry to cleanſe; they fill ulcers with fleſh, and cicatrize them.

But whatever the ſubſtances are that impregnate them, it is plain they are very ſubtile, and that there is but little of a terreſtrial part in them, from their ſpecific lightneſs above other waters: yet when we conſider how agreeable to ſight, ſmell, and taſte; how clear, pure, and ſoft, they are; their gentle degree of heat, ſo adapted to ſundry diſeaſes, it muſt be concluded that thoſe waters imbibe ſome ſalutary particles in their paſſage through the earth, and from the many cures yearly wrought by them, that they have an undoubted title to a place in the firſt claſs of medicinal waters.

The diſeaſes in which Briſtol waters are properly preſcribed, are internal hæmorrhages, and inflammations, blood ſpitting, dyſentery, and immoderate flux of the menſes, purulent ulcers of the viſcera: hence in conſumptions, the dropſy, ſcurvy with heat, ſtone, gravel, ſtranguary; the habitual gout, ſcorbutic rheumatiſm, diabetes, ſlow fevers, atrophy, venereal diſeaſe, cancer, gleets in both ſexes, king's evil, &c. in all theſe diſorders, Bath waters are not only improper, but hurtful. In ſhort, Bath water ſeems to be adapted to the maladies of the ſtomach, guts, and nerves; Briſtol, to thoſe of the lungs, kidneys, and bladder: again, Bath waters are at variance with a milk courſe; and the Briſtol can never be judiciouſly directed, but when they may be joined with reaſon and ſucceſs. The Briſtol-waters are taken medicinally only during the hot months, as from April to September.

* BRITAIN (GREAT.) The length of Great Britain, from Dunnet Head in Scotland, to Dartmouth in England, is five hundred and ſeventy meaſured miles, or four hundred and ninety geographical miles; from Harwich in England, to St. David's in Wales, is three hundred and ſix meaſured, or two hundred and ſixty-ſix geographical miles, ſuppoſing they are computed in a direct line. But if we go as ſtrait as we can along the road, it is three hundred and ninety-ſix meaſured miles, from New Haven in Suſſex, to Berwick upon Tweed, which is the length of England only; and from Harwich in Eſſex, to the Land's End in Cornwall, three hundred and ſeventy-one. But if it be meaſured directly acroſs, from Malden in Eſſex, to St. David's in Wales, it is not much above three hundred miles. See England, Scotland, Wales, &c.

BRITTLENESS, that quality of bodies which ſubjects them to be eaſily broken.

BRIZE-VENTS, ſhelters uſed by gardeners who have not walls on the north-ſide, to keep the cold winds from damaging their beds of melons.

BROACHING-TO, in navigation, the act of bringing a ſhip's ſide to the wind, when ſhe had been ſteering before it: this is a moſt dangerous incident, and is often apt to prove fatal, as a ſhip may be overturned at the time of broaching to, ſince ſhe can always carry more ſail before the wind than when bearing her ſide to it; it is occaſioned only by the negligence or incapacity of the helmſman.

BROAD, an appellation given to things whoſe breadth bears a conſiderable proportion to the length.

BROADSIDE, in naval affairs, the whole diſcharge of the artillery on one ſide of a ſhip upon an enemy.

BROCADE, or BROCADO, a ſtuff of gold, ſilver, or ſilk raiſed and enriched with flowers, foliages, and other ornaments, according to the fancy of the merchants or manufacturers.

BROCCOLI, in gardening, the name of a well known plant, of which there are three ſorts; namely the common broccoli, the green broccoli, and the Siberian broccoli, which is the curled cole-wort, by ſome called Scotch cale. All theſe are for winter uſe; but the laſt is moſt eſteemed. The two former are ſown about the middle of April, and are fit for tranſplanting in about two months after. When this is done, the plants of either of theſe ſorts ſhould be ſet a foot aſunder in rows two feet diſtant from each other. They ſhould not be eaten before the froſt has rendered them tender; for till then they are tough and bitter. The Siberian broccoli, which is extremely hardy, never injured by cold, and always ſweeter in ſevere winters, than in mild ones, need not be ſown till the beginning of July, and when its plants are ſtrong enough for removing, that is to ſay, when they have about ſix or eight leaves, they ſhould likewiſe be ſet in rows. The diſtance of a foot and a half, or perhaps rather two feet again, between the rows, may be ſufficient here. Theſe will be fit for uſe ſoon after Chriſtmas, and continue good till April.

The Roman or purple broccoli, the Naples or white broccoli, and the brown or black broccoli, are the ſorts cultivated in the kitchen-garden. The former of theſe is the beſt flavoured, and continues longeſt in ſeaſon; for which reaſon it is the moſt eſteemed. The white broccoli taſte ſo like the cauliflower, that it is not always eaſy to diſtinguiſh them. The brown or black ſort is the leaſt delicate; but it is the hardieſt, and grows to the largeſt ſize.

For a ſecond crop to ſupply the table after the firſt is gone, Mr. Miller adviſes the ſowing of broccoli again in the beginning of July: but Mr. Switzer thinks it wrong to ſow this plant even ſo late as Midſummer; “becauſe, ſays he, its ſtems will not be ſtrong enough, before the winter to produce that number of ſprouts which otherwhiſe they would.” He therefore prefers portioning out the plants into three parts, and cutting their heads off entirely within a foot and half, or two feet of the ground; beginning to do this to one parcel about a fortnight before Michaelmas, to the next about a month after, and to the laſt about a fortnight or three weeks before Chriſtmas; by which means a continued ſucceſſion of ſprouts will enſue from the ſides of their remaining ſtems. Mr. Miller's method here will produce the largeſt heads, and Mr. Switzer's the greateſt number of ſmall ones.

The ſeeds of broccoli, are ſaved in the ſame manner as thoſe of the common cabbage; or if there be any difference, it is in regard to the white broccoli, of which it is beſt to reſerve a few of the largeſt heads of the firſt crop, and let them run up to ſeed, carefully ſtripping off all the under ſhoots, ſo as to leave only the main ſtem. *Mills's Huſbandry.*

BROKEN-BACKED, amongſt ſeamen, a ſhip is ſaid to be ſo, when either by age or ſome great ſtrain ſhe is ſo weakened in the keel and midſhip frame as to droop at both ends. See KEEL.

BROKER, a name given to perſons of ſeveral and very different profeſſions, the chief of which are exchange-brokers, ſtock-brokers, pawn-brokers, and brokers, ſimply ſo called, who ſell houſhold furniture, and ſecond-hand apparrel.

BRONCHIA, in anatomy, the ramifications of the trachea.

BRONCHIAL ARTERY, a veſſel allotted to the nutrition of the lungs. It riſes ſometimes ſingle, ſometimes double, ſometimes triple, from the aorta and intercoſtals, and adheres every where firmly to the bronchia.

BRONCHIAL-VEIN ariſes either from the intercoſtals, or from the vena azygos; accompanies the artery, and divides into the ſame number of branches with it. As the artery brings blood to the bronchia for the nutrition thereof, and of the veſicles of the lungs, ſo the vein carries off the blood again to the cava, where it ſoon terminates.

BRONCHOCELE, in ſurgery, a tumour ariſing in the anterior part of the neck, from the reſiſting flatus or air, ſome humour or other violence, as ſtraining in labour, lifting of weights, &c.

This diſorder with us is frequently called a Derby-neck, on account of the inhabitants of that county being much ſubject to it; when once it becomes inveterate, it is very difficult, if ever curable, by medicines; but may be diſperſed, if it is recent. A leaden collar, mixed with mercury, prevents it from growing bigger, if it does not entirely diſperſe it.

BRONCHOTOMY, in ſurgery, an inciſion made in the aſpera arteria, or windpipe, which is neceſſary in many caſes, and eſpecially in a violent quinſey, to prevent ſuffocation from the great inflammation or tumour of the part. It is alſo called tracheotomy.

There are ſeveral methods, of performing this operation; but that which exceeds the reſt, as being moſt eaſy and expeditious, and occaſioning the leaſt wound and pain to the patient, is by an inſtrument conſiſting of a ſmall tube, in which is contained a triangular needle called a trochar. If a drowned perſon has but juſt expired, or not continued long under water, the moſt certain and expeditious way of recovering him, will be by opening the trachea with ſuch inſtrument as is neareſt at hand, and afterwards to inflate or blow into his lungs either with the naked mouth, or with a tube.

*BRONTEUS, in heathen mythology, one of the names which the Greeks gave to Jupiter, which ſignifies thunder, whence the Latins called him thundering Jupiter. Some have alſo given the ſame name to Bacchus, on account of the noiſe and miſchief which often attends drunkenneſs.

BRONTES, in fabulous hiſtory, one of the Cyclops, who laboured at Vulcan's forge, and was thus named from his forging Jupiter's thunderbolts.

BRONTIÆ, *Thunder Stones*, in natural hiſtory, the ſame with the belemnitæ. See BELEMNITES.

BRONZE, a compound metal, conſiſting of two thirds copper, and one third of braſs.

BRONZING, the act of colouring by metalline powders, plaſter or other buſts and figures, in order to make them appear as if caſt of bronze, copper, or other metals.

This is ſometimes done by means of cement; and ſometimes without, in the inſtance of plaſter figures; but the bronzing is more durable and ſecure when a cement is uſed.

The gold powders, and the aurum moſaicum, are frequently employed for this purpoſe; but the proper bronzing ought to be of a deeper and redder colour, more reſembling copper; which effect may be produced by grinding a very ſmall quantity of red lead with theſe powders; or the proper powder of copper may be uſed.

Where the appearance of braſs is deſired, the gold powders, or the aurum moſaicum, may be mixed with a little of the powder called argentum muſivum.

Where no cement is uſed in bronzing, the powder muſt be rubbed on the ſubject intended to be bronzed, by means of a piece of ſoft leather, or fine linen rag till the whole ſurface be coloured.

The old method of uſing a cement in bronzing was to mix the powders with ſtrong gum water, or iſinglaſs ſize; and then with a bruſh, or pencil, to lay them on the ſubject; but the artiſts at preſent uſe the japanners gold ſize; and proceed in all reſpects in the ſame manner as in gilding with the powders in other caſes. See Gilding.

The fictitious ſilver powder called argentum muſivum, may be applied in the ſame manner as bronze, by thoſe whoſe caprice diſpoſes them to ſilver figures or buſts.

BROOK-LIME, in botany, the Engliſh name of the water anagallis. See Anagallis.

BROOM, *Geniſta*, in botany. See Genista. Many gather the yellow buds of this plant, and pickle them with ſalt and vinegar, in the ſame manner as capers, from which they are not then to be diſtinguiſhed; the flowers are moſt in uſe, and are accounted ſplenetic, nephritic, and hepatic.

Broom is extremely pernicious to arable and paſture-lands; and therefore ought by all means, to be rooted up, which is the only method of killing it. On barren grounds, indeed, it is a good improvement; for beſides its uſe as fuel, it makes an excellent and laſting thatch, if well laid on.

Butcher's BROOM, the Engliſh name of a genus of plants, called by botaniſts ruſcus.

Spaniſh BROOM, in botany, the Engliſh name of the ſpartium.

BROOM-LIME, in botany, the Engliſh name of the veronica.

BROOM-RAPE, the orobanche of botaniſts.

BROW, or EYE-BROW, the hairy arch extended over the orbit of each eye.

BROW-ANTLER, among ſportſmen, that branch of a deer's horn next his head.

BROW-POST, among builders, the beam that goes acroſs the building.

BROWN, among painters, dyers, &c. a duſky colour, with a reddiſh caſt. There are a great variety of degrees of this colour, diſtinguiſhed by different appellations. The principal brown colours among painters are Spaniſh brown, brown pink, biſtre, brown okre, umbre, aſphaltum, and Spaniſh juice, or the extract of liquorice. See each under its proper article. But it muſt be remembered, that a brown colour of any tinct deſired may be procured by a judicious mixture of red, blue, and yellow.

* BRUNSWICK, a city of Germany, in the circle of Lower Saxony, and capital of the duchy of the ſame name. It is compoſed of five towns, the Old Town, the New Town, the Hagen or Burg, the Old Wieck, and the Sac. There are ſeveral churches, one of which is an ancient Gothic building. Brunſwick is a fortified place, and would require a numerous army to beſiege, and not a few men to defend it. It is of a ſquare form, divided in the middle by the river Ocker, and is about two miles in circumference. The walls are lofty, and the fortifications good. On the ramparts is a mortar-piece of braſs, ten feet ſix inches long, and nine feet two inches in diameter, weighing one thouſand eight hundred quintals, and has ninety-three quintals of iron in the carriages. It will carry a ball of ſeven hundred and thirty pounds weight to the diſtance of thirty-three thouſand paces, and throw a bomb of a thouſand weight, but then it requires fifty-two pounds of gun-powder. This city is the reſidence of the duke of Brunſwick Wolfembuttle. He has theatrical and muſical entertainments, though his revenues are not very large, and has five regiments to keep garriſon. The inhabitants of this city and parts about it carry on a conſiderable trade with Bohemia, and the country abounds with very good hops, as alſo with turneps, with the ſeeds of which they make oil. The religion here is the Lutheran, which they are very ſtrict in. It is fifty-five miles weſt of Magdeburgh, thirty eaſt of Hanover, and eighty-eight weſt-by-ſouth of Brandenburgh. Long. 10. 28. E. Lat. 52. 15. N.

* BRUSSELS, the capital of Brabant, in the Auſtrian Netherlands, and the ſeat of the Auſtrian governor, is ſeated on the ſmall river Senne, which runs through it. It is a rich and handſome city; and among

the public ſtructures, the ducal palace, where the governor reſides, the town-houſe, and the arſenal, are moſt ſuperb; and no city in Europe, except Naples and Genoa, makes a finer appearance at a diſtance; but, like them, when in the town, it is all up and down hill. It is encompaſſed with a double brick wall, and has ſeven gates; but being ſeven miles in compaſs is too large to hold out a long ſiege. There are here ſeveral palaces of the nobility; that of Orange now belongs to the king of Pruſſia. The opera-houſe is built after the Italian manner, with rows of boxes, in which are chimneys. One is covered over with looking glaſs, ſo that they can ſit by the fire, drink a bottle, and ſee what is doing. There are twenty public fountains, adorned with ſtatues, at the corners of the moſt public ſtreets, and in the middle of the town-houſe is one with Neptune, and the tritons ſpouting out water, as well as the horſe from his noſtrils. The hoſpitals are well endowed, ſome of which are for the maintenance of ſtrangers for three Days. There is alſo a foundling-hoſpital, and one for penitent courtezans.

Among the churches, that of St. Gudula is very magnificent. There are ſeveral monaſteries and nunneries, two of which laſt are Engliſh. The nunnery called the Beguinage is like a little town, being ſurrounded by a wall and a ditch, and has little ſtreets where each nun has an apartment. Six or ſeven hundred girls are educated here. In 1695 Bruſſels was bombarded by Marſhal Villeroy, who demoliſhed four thouſand houſes, the ſtadt-houſe, and ſeveral churches. In 1708 it was beſieged again, by the elector of Bavaria; but the duke of Marlborough ſoon came to his aſſiſtance, and obliged him to raiſe the ſiege with precipitation. Marſhal Saxe, the French general, took it in 1746, but it was reſtored back by the treaty of Aix la Chapelle. It is twenty three miles ſouth of Antwerp, one hundred and fifty north-by-eaſt of Paris, and one hundred and ſixty-three eaſt of London. Long. 4. 8. E. Lat. 50. 51. N.

BRUTE, an animal not having the uſe of reaſon, or that acts by mere inſtinct, in which ſenſe it implies much the ſame with beaſt, and comprehends all animals, except the human ſpecies.

Philoſophers are however far from being agreed on this ſubject; ſome making them mere machines, while others allow them both reaſon and immortality. Perhaps thoſe come neareſt the truth, who, by taking a middle courſe, avoid the two extremes, and allow brutes to have imagination, memory, and paſſion; but deny that they have underſtanding or reaſon, at leaſt in any degree comparable to that of mankind.

BRYONIA, bryony or wild-vine, in the materia medica, a perennial rough plant, growing wild in hedges, climbing on the buſhes with curled tendrils.

Freſh bryony root, taken up in the beginning of ſpring, abounds with a thin milky juice; if the upper part of the root be bared of earth, and the top cut over tranſverſely, the juice continues to riſe gradually to the ſurface, for two or three days ſucceſſively, and may be collected by forming a cavity in the middle to receive it. Both the root in ſubſtance, and the juice, have a diſagreeable ſmell, and a nauſeous, bitter biting taſte: applied for ſome time to the ſkin, they inflame or even veſicate the part. On drying the one, or inſpiſſating the other, they loſe moſt of their acrimony, and nearly the whole of their ill ſcent. In ſummer, the root proves much leſs juicy, and weaker both in ſmell and taſte.

This root, taken in powder from a ſcruple to a dram, proves a ſtrong cathartic. It was formerly given, both as a purge, in maniacal and hydropic caſes; and in ſmaller doſes, as a reſolvent and deobſtruent, in uterine and aſthmatic diſorders, in which it is reported to have been of great efficacy. At preſent it is, in this country, very rarely made uſe of in either intention; on account, not entirely of the violence of its operation, for purgatives as violent as it are ſtill retained in practice, but partly of its degree of activity in different ſtates and forms, being very variable, and leſs aſcertained than that of other cathartics in more general uſe. It is ſaid, that when freſh it operates violently upwards as well as downwards; and that when dry, it acts with leſs violence, and chiefly by ſtool; that the juice, which iſſues from it ſpontaneouſly, purges mildly in doſes of a ſpoonful, and that the freſh root, bruiſed and freed from its liquid by preſſure, and afterwards dried, is ſtill purgative.

Externally, the freſh root is employed in cataplaſms, as a reſolvent and diſcutient; againſt tumors, both of the ſchirrous and œdematous kind, ſtagnations and coagulations of the blood from external injuries and iſchiadic and other rheumatic pains.

BRYUM, in botany, a genus of moſſes conſiſting of a ſtalk furniſhed with leaves, which ariſe immediately from the root: on this ſtalk ſtands a ſeparate pedicle, with a conic capſule on its top, covered with a ſmooth operculum, and containing a fine powder.

BUBBLE, in philoſophy, a ſmall drop, or veſicle of any fluid, filled with air, and either formed on the ſurface of the fluid, as in rain, &c. or in its ſubſtance, by an internal motion of its component particles. Bubbles are dilatable and compreſſible; that is, they take up more or leſs ſpace, as the included air is more or leſs heated, more or leſs preſſed externally: becauſe the included air acts equally in every direction.

BUBBLE, in commerce, a cant term given to projects for raiſing money on imaginary foundations, much practiſed in France and England in the Years 1719, 1720, and 1721.

BUBO, or BUBOE, in ſurgery, a tumour which ariſes, with inflammation, only in certain or particular parts to which they are proper, as in the arms-pits and in the groins. See TUMOUR.

The diviſion of a bubo is generally twofold, the benign and the malignant; a bubo is ſaid to be benign, when it ariſes ſpontaneouſly, without any preceding contagious and peſtilential diſeaſe, as they frequently do in infants; thoſe are alſo of this kind which come after benign fevers, being a critical diſcharge of the diſeaſe.

In buboes, which are unaccompanied with any other diſeaſe, the frequent taking of ſome cathartic medicine, with an addition of mercurius dulcis is found to be of great ſervice; other medicines, which attenuate the blood, ſhould be alſo uſed. When the inflammation is ſo gentle, as to give hopes of diſperſion, it may be proper to apply diſcutient plaſters externally, as *emplaſt. diachyl. ſimplex, de ſpermate ceti, de galbano, &c.*

But if the inflammation proves more violent, the pains more intenſe, and the diſcutient plaſters avail nothing, it will be proper to bring it to ſuppuration, by the application of emp. diachylon, cum gummis, or ſomething as effectual. But,

Peſtilential BUBOES are diſtinguiſhable from other tumours, by their happening at a time, and in conjunction with the plague, and from their being accompanied, in the patient, with the ſymptoms proper to that diſtemper: Theſe tumours are ſometimes joined with carbuncles.

It is not without reaſon affirmed by ſome of the more learned and modern phyſicians, that almoſt the whole buſineſs of curing the plague conſiſted in carfully promoting the eruption of buboes. The patient, upon the firſt appearance of the tumours, ſhould keep the houſe, or rather keep in a warm bed, to be more ſecure from the air.

In the external treatment, it is very ſerviceable to rub the tumified part pretty ſtrongly with the hands or cloths; and, what is ſtill preferable, to apply external maturative and emollient medicines, whereby they will come out the ſooner; the patient will alſo find great benefit from the uſe of a cataplaſm, made *ex fermento panis callidò, vel ſolo, vel cum ſale atque ſinapi contrito.* To the external applications, it will be proper to join internal medicines, by the help of which the venom, lurking in the body, may be expelled in a gentle ſweat.

Venereal BUBO, a tumour with pain and inflammation, ariſing in the groin or arms-pits, after contact with an impure woman, who is afflicted with the venereal diſeaſe. The moſt certain ſigns of buboes being venereal are, the patients having to do with theſe women, and from their being, and having been, accompanied with gonorrhæas, chancres, or other ſymptoms of the venereal diſeaſe. With regard to the cure, there are many phyſicains who hold, that the diſperſion of venereal buboes are equally improper as in the peſtilential; they therefore judge it neceſſary to abſtain entirely from bleeding, purging, and to forward the tumour to ſuppuration as faſt as poſſible: however, others are for taking cathartic and mercurial medicines, together with a decoction of the woods, and other purifiers of the blood. The diſperſion is to be effected with large doſes of mercurius dulcis, as is uſual in carrying off gonorrhæas.

BUBONOCELE, or HERNIA INGUINALIS, in ſurgery, a tumour in the inguen, formed by a prolapſus of the inteſtines, omentum, or both, through the proceſſus of the peritonæum, and rings of the abdominal muſcles.

The bubonocele may ariſe from two cauſes, viz. a relaxation of the peritonæum and rings of the abdominal muſcles, or ſome violent contraction and preſſure of the abdominal muſcles upon the inteſtines, as in jumping, lifting of great weights, coughing, hollowing, blowing a trumpet, riding on horſe-back, a fall, &c.

When this diſorder is formed inſenſibly, and by degrees, it is attended with but few and ſlight ſymptoms; when it ariſes from violent colds, exerciſes, eating too plentifully of groſs and flatulent food, which will exaſperate the diſorder, the conſequence will be violent pain and inflammation, ſickneſs, vomiting, and the iliac paſſion. It may be further diſcovered from the tumour occaſioned thereby in the groin, which proceeds up to the ring of the abdominal muſcles; and when the inteſtine is not incarcerated, but returnable into the abdomen, the tumour ſubſides upon lying down. When the bubonocele is incarcerated, ſo that the parts forming the tumour are not returnable into the abdomen, it uſually appears with a great reſiſtance to the touch, redneſs, and inflammation.

Theſe ruptures are often attended with danger, eſpecially the incarcerated ones, in which, if the inteſtine be not timely returned, but the ſtricture continues two or three days, red and livid ſpots appear upon the tumour, which denote a ſphacelus or mortification; and if an univerſal cold ſweat ſeizes the patient, he has generally but a few hours to live. When the omentum alone falls down, there is leſs danger than when it is accompanied with the inteſtines.

When the inteſtine is returnable, the patient ſhould be laid on his back, with his thigh a little bent, to relax the integuments; then the tumour is to be gently preſſed, or returned with the hands and fingers, after which a plaiſter and compreſſure are to be applied to the part affected, and retained with a proper truſs, and a girdle or bandage, without taking them off for ſeveral months, or longer, as there is occaſion. See TRUSS.

When the inteſtine is not returnable, then the operation of inciſion becomes abſolutely neceſſary, in order to dilate the parts. However, the ſurgeon may firſt try the repeated uſe of cataplaſms, ointments, and laxative clyſters, after bleeding; whereby the ſtricture is ſometimes removed, and the inteſtine may be returned by the finger, without much difficulty.

BUCCANEERS, thoſe who dry and ſmoke fleſh or fiſh, after the manner of the Americans. This name is particularly given to the French inhabitants of the iſland of St. Domingo, many of whom hunt bulls or wild boars, in order to ſell the hides of the former, and the fleſh of the latter. The buccaneers are of two ſorts: the buccaneers ox-hunters, or rather hunters of bulls and cows; and the buccaneers boar hunters, who are ſimply called hunters. Buccaneering is a term taken from Buccan, the place where they ſmoke their fleſh or fiſh, after the manner of the ſavages, or on a grate or hurdle, made of braſil wood, placed in the ſmoke, a conſiderable diſtance from the fire: the place is a hut, of about twenty-five or thirty feet in circumference, all ſurrounded and covered with palmetto leaves.

BUCCANEERS alſo ſignify thoſe famous adventurers of all the nations in Europe, who formerly joined together to make war againſt the Spaniards of America, cruizing about in privateers, and taking all the veſſels and ſmall craft they could meet with.

BUCCINA, an ancient muſical and military inſtrument. It is uſually taken for a kind of trumpet, or crooked horn, played on like a trumpet.

BUCCINATOR, in anatomy, a muſcle on each ſide of the face, common to the lips and cheeks. Its uſes are to bring the food into the way of the teeth; and the ſalival duct of Steno perforates it in the middle.

BUCCINUM, the TRUMPET-SHELL, a genus of univalve ſhells, ſhaped in ſome degree like a horn, or other wind-inſtrument. This is a very numerous genus, the principal ſpecie of which are the ſpindle-ſhell, the mitre-ſhell, the tower of Babel-ſhell, &c.

BUCENTAUR, a galeas, or large galley of the doge of Venice, adorned with fine pillars on both ſides, and gilt over from the prow to the ſtern.

BUCK, among ſportſmen, in his firſt year, is called a fawn; the ſecond, a pricket; the third, a ſorrel; the fourth, a ſore; the fifth, a buck of the firſt head; and the ſixth, a great buck. This beaſt is common in moſt countries, being corpulent as a hart, but in ſize reſembling more a roe, except in colour; the males have horns, which they loſe yearly; the females none at all. Their fleſh is excellent nouriſhment.

BUCK-BEAN, in botany, the trifolium paluſtre, or marſh trefoil of authors.

* BUCKINGHAM, the chief town in Buckinghamſhire, is ſeated low, and ſurrounded on all ſides except the north by the river Ouſe, over which there are three ſtone bridges. It contains about three hundred houſes, and is governed by a bailiff and twelve capital burgeſſes; ſends two members to parliament, and has a market on Saturdays. It has a free ſchool and a county gaol. It has eight fairs, on

Monday ſeven-night after Epiphany, March 7, May 6, Thurſday in Whitſun-week, July 10, September 4, October 2, and November 8; all for cattle. It is ſixteen miles north-weſt of Aylesbury, and ſixty north-weſt of London. Long. 0. 58. W. Lat. 51. 50 N.

*BUCKINGHAMSHIRE, is bounded on the eaſt by Bedfordſhire, Hertfordſhire, and Middleſex; on the north by Northamptonſhire, on the weſt by Oxfordſhire, and on the ſouth by Berkſhire, which is ſeparated from it by the river Thames. It is forty-two geographical, or forty-ſeven meaſured miles in length, and twenty-three or twenty-ſix in breadth. It is in the dioceſe of London, contains one hundred and eighty-five pariſhes, and ſends fourteen members to parliament. The moſt remarkable towns are, Buckingham, Olney, Newport, Stoney Stratford, Winſlow, Ayleſbury, Ivingo, Wendover, Amerſham, High Wickham, Beaconsfield, Marlow, and Colnbrook.

The rivers that water this county are the Thames, the Coln, the Iſa, and the Ouſe. The air is generally good, eſpecially on Chiltern Hills. It produces fine corn and cattle, and in the vale of Ayleſbury the ſheep are of an extraordinary ſize, with fine fleeces. The principal manufactures are paper and bone lace.

BUCK's-HORN-CRESS, the naſturtium of botaniſts. See Nasturtium.

BUCK-THORN, *Rhamnus*, a hedge tree or buſh, whoſe branches are full of long ſtiff thorns, and yellowiſh green leaves about the ſize of the ſloe-tree, but more neatly ſerrated about the edges. It grows in woods and hedges, and flowers in June, the berries being ripe about the latter end of September. The juice of the berries purge ſerous watry humours pretty briſkly; and is good againſt the dropſy, gout, jaundice, and ſcurvy, and very ſerviceable againſt the itch, and all manner of eruptions on the ſkin.

Whoever purchaſes the buck-thorn berries, may diſtinguiſh whether they are right or not, by opening them, and obſerving the number of ſeeds in each, which ſhould be four; as alſo by bruiſing of the berries on white paper, the juice giving a green tincture.

BUCK-WHEAT, the Engliſh name of the fago pyrum of authors; it is cultivated in many parts of England, and is a great improvement to dry barren lands. The beſt ſeaſon for ſowing the ſeed is in May: one buſhel will ſow an acre. The ground ſhould be plowed and dreſſed in the ſame manner as for barley; and, if the ſoil is not very lean, it will yield a very great increaſe, as fifty or ſixty buſhels upon an acre, and is excellent food for hogs, poultry, &c. The flour of it is very white, and makes a very good ſort of pancake, if mixed with a little wheat flour. The ſtraw is good fodder for cattle; and the grain, given to horſes among their oats, will make them thrive; but it muſt be broken in a mill; otherwiſe it is apt to paſs through the cattle whole. It is commonly late in the ſeaſon before it is ripe; but there is no great danger of the ſeed's failing, nor of ſuffering by wet after it is mown: it muſt lie ſeveral days to dry, that the ſtalks, which are hard, may wither before it is houſed.

Buck-wheat is ſown ſometimes very thick, and ſuffered to grow until it is near flowering, and is then plowed in, which makes a very good lay for wheat or rye: but ſome people eſteem it the better way to feed cattle with it, eſpecially milch-cows, which they ſay will cauſe them to give a great deal of milk, and make both the butter and cheeſe very good. This will alſo afford food for cattle in the drieſt time, when all other graſs is burnt up.

BUCKING *of Cloth*, among bleachers, the firſt operation or ſtep towards whitening of cloth. See Bleaching.

BUCKLE, a well known utenſil, made of divers ſorts of metals, as gold, ſilver, ſteel, braſs, &c.

BUCKLER, a piece of defenſive armour uſed by the ancients, and worn on the left arm. The figure was either circular, oval, or ſquare; and generally adorned in a curious manner with the figures of gods and heroes, or of birds, beaſts, or other productions of nature.

BUCKRAM, a ſort of coarſe cloth made of hemp, gummed, and calendered.

BUCOLIC, in ancient poetry, a kind of poem, relating to rural affairs. See Pastoral.

BUD, among gardeners, that part of a ſeed which firſt begins to ſprout, or rather the leaves which firſt appear.

BUD is alſo uſed to ſignify the ſprout from whence the branch ariſes.

BUDDLE, in minerology, a name given by the Engliſh dreſſers of the ores of metals to a ſort of frame made to receive the ore after its firſt ſeparation from its groſſeſt foulneſs.

BUDDLING, the act of cleanſing or waſhing any ore.

BUDDLING-DISH, a ſmall, ſhallow veſſel for waſhing ores by the hand.

BUDGE-BARRELS, among engineers, ſmall barrels well hooped, with only one head; on the other end is nailed a piece of leather, to draw together upon ſtrings like a purſe. Their uſe is for carrying powder along with a gun or mortar, being leſs dangerous, and carried with more eaſe than whole barrels. They are likewiſe uſed on a battery of mortars, for holding meal powder.

BUFF, a ſort of leather prepared from the ſkin of the buffalo, and dreſſed with oil in the manner of ſhammy. See SHAMMY.

BUFFALO, *Bubalus*, in zoology, an animal of the ox kind, with very large, crooked, and reſupinated horns. It is equal to our largeſt oxen in ſize; and the colour is uſually a blackiſh grey; but in this particular there are great varieties. The buffalo is a native of the Eaſt, but has been introduced in Italy, and ſome other parts of Europe; where it is kept as a beaſt of burden and draught.

BUFFET, a ſmall apartment ſeparated from the reſt of the room by ſlender wooden columns, glaſs-doors, &c. for the diſpoſing china, glaſs, plate, &c.

BUFFOON, a droll, or mimic, who diverts the public by his pleanſantries and follies.

BUFO, the toad, in zoology. See TOAD.

BUG, or BUGG, in zoology, the Engliſh name for a genus of inſects called by authors cimices. See CIMEX.

BUGLOSS, *Bugloſſum*, in the materia medica, a rough plant greatly reſembling borage. It grows wild in waſte gardens, flowers from June to the end of ſummer; and in winter dies to the ground, the roots abiding. The roots, leaves, and flowers, are ranked among the articles of the materia medica, but are very rarely made uſe of.

BUGULA, bugle, or middle conſound, in the materia medica, a low plant with two kinds of ſtalks. It is found wild in woods and moiſt meadows, and flowers in May. The leaves diſcover, on firſt chewing, a ſweetiſh taſte, which is followed by a conſiderable bitteriſhneſs and roughiſhneſs. Infuſions of them, or the expreſſed juice, are recommended as vulneraries, or as mild aſtringents and corroborants, in fluxes and other diſorders. Some have obſerved, that they do not bind the belly, like the other conſolidæ; but that on the contrary decoctions of them are gently laxative, and of great uſe in phthiſes and internal ulcerations. The roots of the plant are conſiderably aſtringent, as appears both from their taſte, and from their ſtriking a black clour with ſolution of chalybeate vitriol.

BUILDING, a fabric or ſtructure erected by art, either for devotion, magnificence, or conveniency.

BUILDING is alſo uſed to ſignify the art of conſtructing and raiſing an edifice; in which ſenſe it comprehends the expences, as well as the invention and execution of the deſign.

In the art of building, conveniency, firmneſs, and pleaſure, are to be conſidered; and theſe Sir Henry Wotton conſiders under two heads, the ſituation, and the work.

As to the ſituation, either that of the whole is to be conſidered, or that of its parts. In the firſt, regard muſt be had to the quality, temperature, and ſalubrity of the air; to the quality of the ſoil; to the conveniency of water, fuel, carriage, &c. and to the agreeableneſs of the proſpect. As to the ſituation of the parts, the chief rooms, ſtudies, and libraries, ſhould lie towards the Eaſt; thoſe offices which require heat, as kitchens, brew-houſes, bake-houſes, and diſtillatories, towards the South; thoſe that require a cool, freſh air, as cellars, pantries, and granaries to the North; as alſo galleries for paintings, muſæums, &c. which require a ſteady light. The ancient Greeks and Romans generally ſituated the fronts of their houſes towards the South, but the modern Italians vary very much from this rule. And indeed it is abſolutely neceſſary to have regard to the country, each being obliged to provide againſt its own inconvencies.

The ſimple forms of building are either circular or angular. The circular form is very commodious, and the moſt capacious of any, ſtrong, durable, and very beautiful; but is the moſt chargeable of all others, and much room is loſt by the bending of the walls, when it comes to be divided into apartments; beſides an ill diſtribution of the light, unleſs it be from the center of the roof. For theſe reaſons, the ancients employed this form only in their temples and amphitheatres, which had no need of compartitions. As for angular forms, building neither loves many nor few angles. The triangle is condemned above all others as wanting both capacioùſneſs and firmneſs, as alſo on account of its not being reſolvable, in the internal partitions into any other figure than its own. Buildings with five, ſix, or more angles, are more fit for fortifications than civil edifices. The rectangle, therefore, is generally choſen, as being a medium between the triangle and the pentagon, &c. As to mixed forms, partly circular, and partly angular, a judgment may be made of them, from what has been already ſaid of ſimple ones. Let the builder, however, remember not to loſe ſight of uniformity, while he is in purſuit of variety.

The acceſſories or ornaments of a building are fetched from ſculpture and painting. In the firſt, care ought to be taken that there be not too much of it, eſpecially at the entrance; and that both in fine and coarſe pieces of ſculpture, and likewiſe in placing figures aloſt, the rules of perſpective be ſtrictly obſerved.

In painting, the chief things to be regarded are, that the beſt pieces be placed in the beſt lights; and that they be ſuited to the intention of the rooms they are uſed in.

BULB, or BULBOUS ROOT, among gardeners, ſignifies a root of a roundiſh figure, and uſually furniſhed with fibres at its baſe.

BULIMY, among phyſicians, a diſeaſe in which the patient is affected with an inſatiable deſire of eating, and unleſs indulged often falls into fainting fits.

BULK-HEADS, in naval architecture, certain partitions built up in different parts of a ſhip, either acroſs or lengthwiſe, to form and ſeparate the various apartments.

BULL, *Taurus*, in zoology, the male of the ox kind. See Bos.

BULL, *Taurus*, in aſtronomy; ſee TAURUS.

BULL's EYE, in aſtronomy; ſee ALDEBARAN.

BULL-FINCH, in ornithology, the Engliſh name of the loxia with a black head, and red breaſt. It is about the ſize of a common ſparrow; and its wings are elegantly variegated with black and red.

BULL-FROG, the largeſt kind of frog. See RANA.

BULL, a written letter, diſpatched by order of the pope, from the Roman chancery, and ſealed with lead. It is written on parchment, by which it is diſtinguiſhed from a brief.

Golden BULL, an edict or imperial conſtitution, made by the emperor Charles IV. and eſteemed as the Magna Charta or fundamental law of the German empire.

BULLET, an iron or leaden ball, or ſhot, wherewith fire-arms are loaded. See BALL.

BULLION, uncoined gold or ſilver in the maſs.

Thoſe metals are called bullion, both before and after they are refined, when melted down in bars or ingots, or in any unwrought body.

BULWARK, in ancient fortification, the ſame with what the moderns call rampart. See RAMPART.

* BUNGAY, a town in Suffolk, having a market on Thurſdays, and two fairs; on May 14, for horſes and lean cattle, and on September 25, for hogs and petty chapmen. It is ſeated on a ſpot well watered by the river Waveney, which ſeparates it from Norfolk. It has two pariſh churches, one of which is a handſome ſtructure, and near it are the ruins of a famous nunnery, in the middle of the town. The market is very great for corn, which is brought out of Norfolk, and here is a grammar-ſchool, with ten ſcholarſhips for Emanuel college, Cambridge. The women are chiefly employed in knitting worſted ſtockings. It is thirty miles north-by-eaſt of Ipſwich, and one hundred and ſeven north-eaſt of London. Long. 1. 30. E. Lat. 52. 35. N.

BUNIUM, earth-nut, in botany, a genus of plants the fruits of which are oval, and diviſible in two parts; the ſeeds two, and of an oval form, convex on one ſide and plane on the other.

BUNT, in naval affairs, the middle part of any ſquare ſail from top to bottom.

BUNTLINESS, ſmall ropes paſſed up behind the yards, and running through a block or pulley on the yard, reach down before the reſpective ſails. Their uſe is to haul the bunt of the ſail cloſe up to the yard, when it is to be brailed up, or furled. See BRAIL and FURL.

BUNTING, in ornithology, the Engliſh name of the embezia. Its head reſembles, in ſome meaſure, that of a rail; the chin, breaſt, and belly, are of a yellowiſh white; the throat hath oblong black ſpots; the tail is about three inches long, and of a duſky red colour. It generally ſits and ſings upon the higheſt twigs of trees and ſhrubs.

* BUNYAN (JOHN) the celebrated author of the Pilgrim's Progreſs, was born at Elſtow, near Bedford, in 1628.

He was the ſon of a tinker, and, in the early part of his life, a great reprobate, and a ſoldier in the parliament army; but at length laid aſide his profligate courſes, became remarkable for his ſobriety, and applied himſelf to obtain ſome degree of learning. About 1655 he was admitted a member of a Baptiſt congregation at Bedford, and was ſoon after choſen their preacher, but in 1660, was taken up, tried for preſuming to preach, and was ſentenced to perpetual baniſhment, and in the mean time committed to jail, where neceſſity obliged him to learn to make long-tagged thread laces for his ſupport, and to add to his diſtreſs, he had a wife and ſeveral children, among whom was a daughter who was blind. In this cruel confinement he was detained twelve years and a half, and during that time wrote many of his Tracts, but he was at length diſcharged, by the humane interpoſition of Dr. Barlow. When king James's declaration for liberty of conſcience was publiſhed, he was choſen paſtor of a congregation at Bedford. He died at London, the 31ſt of Auguſt, 1688, aged ſixty. He alſo wrote an excellent allegory, called The Holy War. His Pilgrim's Progreſs has been tranſlated into moſt European languages, and is to this day as much read as almoſt any book extant.

BUOY, in naval affairs, a ſort of cloſe caſk or round block of wood, faſtened to the anchor by a rope of ſufficient length to reach up from the anchor, which is ſunk, to the ſurface of the water. It is uſed to ſhew where the anchor lies, that the ſhip may not come near it to entangle the fluke of it with her cable. See ANCHOR.

Buoys are alſo uſed to point out ſhallows, rocks or quick-ſands; and are chained to anchors ſunk in ſuch places, that they may be avoided by ſhipping; theſe are generally very large and ſhaped like a cone or ſugar loaf, called can-buoys: thoſe uſed by ſhipping are wide in the middle, and taper to a point at each end, called nun-boys.

BURDOCK, in botany, the Engliſh name of the xanthium. See XANTHIUM.

BURGAGE, an ancient tenure in boroughs, whereby the inhabitants hold their lands, &c. of the king, or other ſuperior lord of the borough, at a certain yearly rent. A dwelling houſe in a borough was anciently callad a burgage.

BURGESS, an inhabitant of a borough, or one who poſſeſſes a tenement therein.

BURGESS is now generally uſed to ſignify the repreſentative of a borough-town in parliament.

BURGGRAVE, properly denotes the hereditary governor of a caſtle or fortified town, chiefly in Germany.

BURGLARY, a felonious breaking and entering into the dwelling-houſe of another in the night-time, with an intent to commit ſome felony, whether the ſame be actually executed or not. The ſame offence committed by day is called houſe-breaking.

BURGOMASTER, the chief magiſtrate of the great towns in Flanders, Holland, and Germany.

BURIAL. See FUNERAL.

BURLESQUE, a jocoſe kind of poetry, chiefly uſed by way of drollery and ridicule, to deride either perſons or things. Both the word and thing ſeem to be modern, and the Italians appear to have the juſteſt claim to the invention.

BURN, in ſurgery, implies a ſolution of the continuity of a part of the body by the force of fire. When either fire itſelf, or any inſtrument ſufficiently heated by the fire, is applied to any part of the body, the fibres and ſmall veſſels at the place of contact will inſtantly corrugate and burſt, while the blood and other contained fluids will be extravaſated, and there ſtagnate and corrupt.

As a burn is not unlike an inflammation, in regard to degrees, ſo the method of cure in both is much the ſame. When there happens a ſlight burn, or one of the firſt degree, the moſt proper medicines, on all accounts, are reſolvents, of which there are two kinds principally to be obſerved, the aſtringent and the emollient. Mild aſtringents are ſpirit of wine rectified, or camphorated: let the part affected be immerged in this ſpirit, and carefully fomented with linen cloths wet therein. Emollients are of linſeed, or ſweet almonds, of olives, of white lilies, or henbane, &c. with theſe the part affected ſhould be frequently anointed. The vulgar method of applying the burnt part to a candle, or the fire, and keeping it in that poſition as long as you can bear it, repeating this proceſs till all ſort of heat and pain is removed, is frequently attended with ſucceſs. The injured part may be fomented with water, as hot as the patient can bear it, till the pain and heat entirely diſappear.

When the burn is of the ſecond degree, which is attended with a bliſter, it ſeems improper to open the veſicle, or cut the ſkin already lacerated; but the beſt method, in this caſe, is, with all the haſte poſſible, to apply one or other of the medicines preſcribed in the firſt degree, and renewing it very frequently: if the pain continues, lenitive remedies are to be uſed; here the moſt eligible medicines are the linſeed oil, Mynſicht's ointment, unguentum nutritum, &c. With theſe the part muſt be often anointed; or they muſt be ſpread on linen, and bound to the part affected: as the pain and heat gradually decreaſe, ſome plaſter, as that of red lead, may be applied, in order to ſmooth and reſtore the ſkin. If this ſecond degree be more intenſe than ordinary, and affects a great part of the body, it will be neceſſary forthwith to take away ſome blood, in proportion to the violence of the burn even till the patient faints, in order to prevent exulcerations, deformities by ſeams, and perhaps a gangrene: after which a ſtrong cathartic ſhould be uſed.

As to the third degree, in which a cruſt immediately covers the burnt part, it is very difficult, if not abſolutely impoſſible, to cure it, without a ſuppuration. When this happens in the face, all diligence ſhould be uſed to prevent deformity, which may be occaſioned by a large cicatrix; therefore, in this caſe, the uſe of all plaſters and ointments whatſoever is to be avoided: but you cannot be too ſolicitous in forwarding the caſting off of the eſchar, or cruſt, and the evacuation of the matter that is concealed under it; yet it ſhould not be torn away with the knife, nor ſeparated with the hands: the eaſieſt and moſt ſucceſsful method is by the uſe of emollients, ſuch as have been mentioned already, applied warm, and repeated till the hard cruſts ſeparate from the live fleſh; the part ſhould be dreſſed two or three times a day, and at each dreſſing; if you ſhould obſerve any portion of the cruſt tending to a ſeparation from the reſt, it ſhould be removed with the forceps, and the remaining cruſt anointed with butter, at the ſame time never neglecting the uſe of fomentations. The cruſt being taken off, the wound muſt be cleanſed and healed, the firſt of which offices may be executed by any mild digeſtive ointment, mixed up with mel roſarum: the medicines for healing are principally unguentum diampholygos, vel de lithargyrio, &c. but if any portion of the eſchar is left under theſe ointments and plaſters, a danger follows of making a deformed cicatrix, from the conſtriction of the neighbouring parts, and from the acrimony of the confined ſanies. Evacuations by bleeding and purging are always to be premiſed, and proper regulations, with regard to diet, muſt be complied with: the beſt method of encouraging the renovation of the ſkin, is by frequently holding the burnt part over the ſteam that riſes from boiling water. But as to the fourth degree, which is always attended with extreme danger, where the burning has penetrated to ſuch a depth as to corrupt and mortify all before it, almoſt to the very bone, all remedies are vain and uſeleſs, and there is no other way of aſſiſting the patient, but by cutting off the affected limb, as is done in a ſphacelus.

BURNET, the Engliſh name of a plant called pimpinella by Linnæus, and tragoſelinum by Tournefort.

It is a native of this country, and promiſes very great advantages as a green ſucculent food for cattle during the winter months; and the judicious Mr. Rocque, on obſerving, that burnet retains its verdure amidſt all the inclemencies of that ſeaſon, reſolved to try the effect of giving it a good culture. He has ſucceeded therein to his utmoſt wiſh; and the plant bids fair to be of ſingular utility, where flocks of ſheep are kept, becauſe, as it preſerves all its leaves unhurt by froſt, the farmer may thereby have a conſtant ſtock of green food for his ewes and lambs, at a time when turnips and every other ſucculent plant may fail him.

In deſcribing this plant, Mr. Miller diſtinguiſhes ſeven different ſpecies of it; but only three, or perhaps rather but two, of them ſeem to be ſorts proper to be cultivated for the food of cattle. Theſe are; 1. The tragoſelinum majus, umbella candida, greater burnet ſaxifrage, with a white umbel. 2. Tragoſelinum alterum majus, another greater burnet ſaxifrage; and, 3. The tragoſelinum minus, or leſſer burnet ſaxifrage. All theſe are equally hardy plants, and natives of this iſland; but the largeſt ſorts promiſe the greateſt quantity of fodder, and therefore ſhould, probably, be preferred by the huſbandman The firſt of the above-mentioned ſpecies of burnet grows naturally in woods, and on the ſide of banks near hedges, in ſeveral parts of England. It flowers in July, and the ſeeds ripen in Autumn. A variety of this with red flowers is frequently found among the other, and riſes from the ſame ſeed. The ſecond ſort grows naturally in dry paſtures in many parts of this Iſland. The third or ſmaller ſort of burnet, grows naturally in dry gravelly paſtures in ſeveral parts of this country:

In the meadows about Windſor, half the graſs is burnet. Mr. Rocque has experienced, that it will grow in the drieſt land; for he has planted ſome of it even in the gravel walks in his garden, where every thing elſe is burnt up in the ſummer; but this never withers; one of the qualities of burnet being to continue in ſap all the year. It is the opinion of many who have ſeen the burnet of his raiſing, that if this plant is generally cultivated, there will never be a ſcarcity of hay in England, even in the greateſt drought.

The land on which it is ſown ſhould be in fine tilth, and free from weeds, eſpecially couch-graſs, which is here the moſt hurtful of all. A drag, that is to ſay, ſuch a fork as the gardeners clean their aſparagus with, is the beſt inſtrument for extirpating this weed. The dragging of an acre thus will coſt ſix or ſeven ſhillings. If the land is poor, it ſhould be dunged, and laid down very ſmooth. The ſeed may be covered with a very light harrow, for it will not bear to be buried deep, and the ground ſhould then be rolled, that it may be ſmooth for mowing. It may be ſown at any time between April and September.

Ten pounds of Burnet ſeed may do for an acre of land; but twelve, fourteen, or even ſixteen pounds, will be better; becauſe when burnet is thin, the plants grow ſo lage, that the hay made of them is coarſe. Theſe will riſe in eight or nine days after the ſowing. If great numbers of weeds come up with them, it will be leſs chargeable to let theſe weeds grow with the burnet, till it is about five or ſix inches high, than to weed or hoe it. The whole may be then mowed, and gathered clean off, and the quick growth of the burnet afterwards will choak all other weeds. The heart of the burnet being almoſt within the ground; the ſcythe cannot hurt it.

If the burnet does not grow equally every where, ſome plants muſt be drawn where they are too thick, and planted where they are thinneſt; or the vacant ſpaces may be ſupplied from the nurſery. If the land was not in good order to ſow the ſeeds at a proper ſeaſon, the burnet may be tranſplanted at Michaelmas from this nurſery, and ſet at nine or twelve inches diſtance every way, according to the richneſs of the ſoil.

The ſeed ſown in May may be mowed at the latter end of July. That ſown in June will yield a pretty good crop, and muſt be cut but once; and the ſame of that which is ſown in July.

The plants produced by the ſeed ſown in Auguſt ſhould be mowed, to deſtroy the weeds. Theſe mowings may either be given green to horſes, or be made into hay. The firſt ſpring cutting will purge horſes; and Mr. Rocque believes it will alſo cure the greaſe; but it is only the firſt crop that purges.

Burnet ſhould be mowed but once the firſt year, in order to leave it rank in the winter; and in this caſe it will be ready to feed in February or March, or to mow again in April.

If natural graſs grows among the burnet, it may be harrowed in the ſame manner as lucern; for, having a tap-root, the harrow will not hurt it: But it muſt not be ploughed, leſt the roots ſhould be broken in the ground.

When the ſeeds of this plant are to be ſaved, it muſt neither be fed, nor mowed, in the ſpring. The ſeed will be ripe about the middle of June, which muſt be reaped, like wheat, and threſhed on a cloth. It ſhould be threſhed before it is too dry, becauſe it is apt to ſhed, and it ſhould afterwards be dried perfectly.

Burnet does not loſe its leaves in drying; and though the hay made of it be ſticky, it will after thraſhing be very agreeable to horſes, which are ſo fond of it, that they never waſte any. One acre will produce upwards of three loads of hay, and above forty buſhels of ſeed. Horſes are fonder of this ſeed, than they are of oats; and Mr. Rocque is of opinion that it is a more proper food for thoſe who do not labour hard, becauſe it is not of ſo hot a nature. Burnet bears ſeed twice a year, and will afterwards yield a very good ſpring crop.

It is not only good for horſes, but alſo for all manner of cattle; even for ſwine; and Mr. Rocque has experienced another virtue in it, which is, that being ſtung by a waſp, the leaves of this plant rubbed pretty hard upon the part ſo injured, immediately took off the inflammation.

Mr. Worlidge mentions as another excellent quality of this plant, that all good houſe-wives hold as an infallible rule, that there never need be any bad cheeſe or butter, but eſpecially cheeſe, where ſaxifrage grows: “ from whence,” adds he, “ it cometh, that the Netherlands abound “ much in that commodity, and only as “ is ſuppoſed through the plenty of this “ herb.” *Mills's Huſbandry.*

BURNING, the action of fire on ſome pabulum or fewel, whereby the minute parts of thoſe bodies are ſeparated from one another, and put into a violent motion by the action of the fire. See FIRE.

BURNING-GLASS, a convex or concave glaſs, commonly ſpherical, which being expoſed directly to the ſun collects all the rays falling thereon into a very ſmall ſpace, called the focus, where wood, or any other combuſtible matter being put, will be ſet on fire.

Burning-glaſſes are of two kinds: the firſt, which is convex, called lentes cauſticæ, tranſmits the rays of light, and in their paſſage refract, or incline them towards the axis, having the property of len's, and acting according to the laws of refraction. The ſecond, which are the more uſual, are concave; theſe reflect the rays of light, and in that reflection, incline them to a point in their axis, having the properties of ſpecula or mirrors, and acting according to the laws of reflection. See MIRROR and REFLECTION.

Hiſtorians tell us, that Archimedes, by means of a concave mirrour, burnt a whole fleet: and though the effect related be very improbable, yet does it ſufficiently prove ſuch things were then known. The machines then uſed, no-body doubts, were metallic and concave, and had their focus by reflection; it being agreed that the ancients were unacquainted with the refracted foci of convex glaſſes.

It ſeems difficult to conceive how they ſhould know ſuch glaſſes would burn without knowing they would magnify, which it is granted they did not, till towards the cloſe of the thirteenth century, when ſpectacles were firſt thought on. But it is ſtill more wonderful there ſhould be three hundred years between the invention of ſpectacles and teleſcopes.

Among the ancients, the burning mirrours of Archimedes and Proclus are famous; by one of theſe the Roman ſhips beſieging Syracuſe, under the command of Marcellus, according to the relations of Zonoras, Tretzas, Galen, Euſtathius, &c. and by the other, the navy of Vitilian beſieging Byzantium, according to the ſame Zonoras, were burnt to aſhes,

Among the moderns, the moſt remarkable burning mirrours are thoſe of Settala, of Villette, and Tſchirnhauſen, and that by M. Buffon.

The effect of Villettes mirrour, as found by Dr. Harris and Dr. Deſaguliers, are, that a ſilver ſixpence is melted in 7″ and 2, a king George's halfpenny in 16″, and runs with a hole in 34. Tin melts in 3″, caſt-iron in 16″, ſlate in 3″; foſſile ſhell calcines in 7″, a piece of Pompey's pillar at Alexandria, vitrifies in the black part in 50″, in the white in 54″; copper ore in 8″, bone calcines in 4″, vitrifies in 33. An emerald melts into a ſubſtance like a turquois ſtone, a diamond weighing four grains, loſes $\frac{7}{8}$ of its weight; the aſbeſtos vitrifies; as all othet bodies will do, if kept long enough in the focus; but when once vitrified, the mirrour can go no farther with them. This mirrour is forty-ſeven inches wide, and is ground to a ſphere of ſeventy-ſix inches radius; ſo that its focus is about thirty-eight inches from the vertex. Its ſubſtance is a compoſition of tin, copper, and tin glaſs.

Every lens, whether convex, plano-convex, or convexo-convex, collects the ſun's rays, diſperſed over its convexity, into a point by refraction; and is therefore a burning-glaſs. The moſt conſiderable of this kind is that made by M. de Tſchirnhauſen.

This glaſs vitrifies tiles, ſlates, pumice-ſtones, &c. in a moment. It melts ſulphur, pitch, and all roſins, under water; the aſhes of vegetables, woods, and other matters, are tranſmuted into glaſs; and every thing applied to its focus, is either melted, turned into a calx, or into ſmoke. Tſchirnhauſen obſerves, that it ſucceeds beſt when the matter applied is laid on a hard charcoal well burnt.

Sir Iſaac Newton preſented a burning-glaſs to the Royal Society, conſiſting of ſeven concave glaſſes, ſo placed, as that all their foci join in one phyſical point. This glaſs vitrifies brick or tile in 1″, and melts gold in 30″.

Notwithſtanding the prodigious denſity of the rays of the focus of theſe large burning glaſſes, yet it has been always obſerved, that the rays reflected to us by the moon, when at full, and concentered in the focus of thoſe glaſſes, produce no heat that is ſenſible in the leaſt degree, as is demonſtrated by holding a thermometer in the focus of lunar rays, which always remains without the leaſt appearance of motion.

BURNING *of Land*, a very great improvement in huſbandry, and is at this time uſed in many parts of this and other kingdoms, and has been practiſed from the earlieſt times. Virgil very expreſſly mentions, and greatly recommends it; and all the old writers of huſbandry ſay much in its praiſe.

It does not take effect, however, in all ſorts of ground. It is not proper for rich ſoils, nor for ſtony or chalky ones; nor is it a practice often to be repeated on any land, eſpecially where the ſurface is very ſhallow; nor muſt corn be ſown too long upon the land afterwards; for burning exhauſts the good juices of the land, in ſome degree, as well as the bad ones. It is moſt profitably uſed to ſuch lands as have laid a long time uncultivated, and over-run with rank weeds, ſuch as four graſs, fern, heath, furze, and the like. Some lands, when corn is ſown upon them, run it up into ſtraw, and make the ears but poor and light; theſe are, beyond all others, improved by burning. The uſual methods of ploughing up for this is with a breaſt-plough, which a man puſhes before him, and cuts the turf off the ſurface, turning it over when he has cut it to about eighteen or twenty inches long. The common way is only to pare it about half an inch thick; but if it be very full of weeds, with ſtubborn roots, it is better to go deeper.

If the ſeaſon proves dry, the turf needs no more turning but dries as it lies. If it be wet, it is neceſſary to ſet it on edge, and keep it hollow till ſuch time as the wind and air have ſufficiently dried it. It is then to be piled up in little heaps, about the quantity of two wheel-barrows full in each heap: and if there be much roots and a good head upon it, there needs no farther care but ſetting it on fire, and the whole heap will be reduced to aſhes; but if it be earthy and too dead to burn out by itſelf, there muſt be a heap of furze or heath laid under every parcel.

When the heaps are reduced to aſhes, they are left upon the place till ſome rain comes to wet them; otherwiſe, in the ſpreading, they would all blow away. When they are wetted, the farmer takes the opportunity of a calm day, and ſpreads them as equally as poſſible over the whole land, cutting away the earth a little under the heaps, to abate its over-great fertility there. After this the land is to be ploughed but very ſhallow, and the corn is to be ſown upon it only in half the quantity that it is upon other land; and the later this is ſown the better. If it be wheat, the beſt time is the latter end of October; for if ſown ſooner, it is apt to grow too rank. The beginning of May is the proper time for cutting the turf off from theſe lands, becauſe there is then time ſufficient to get the land in order for ſowing at the proper ſeaſon. The whole charge of cutting, carrying, and burning the turf, is generally about twenty-four ſhillings an acre.

The turf is not to be burnt to white aſhes; for this waſtes a great part of its ſalt; it is only to be burnt ſo as to crumble all to pieces, and be in condition to ſpread well upon the land; and it is better that the heaps of it ſhould burn ſlowly and gradually than furiouſly.

Some farmers ſtub up furze, heath, and the like, and covering heaps of them with the parings of the earth, ſet fire to them; others burn the ſtubble of the corn-fields; and others the ſtalks of all ſorts of weeds, and add half a peck of unſlacked lime to every buſhel of aſhes. They cover the lime with the aſhes, and leave heaps in this manner till there comes ſome rain to ſlake the lime; and after this, they ſpread the mixture carefully over the field. There is one great advantage attending this ſort of manure, which is, that it does not breed weeds like the common way with dung, but only fills the ears of the corn, not running them up into ſtalk; but it is proper to add ſome dung to theſe lands at the time of ploughing them up for a ſecond or third crop of corn. *Mortimer's Huſbandry*.

BURNING, in enamal painting. See Enamel *Painting*.

BURNISHER, a round poliſhed piece of ſteel, ſerving to ſmooth and give a luſtre to metals.

Half burniſhers are uſed to ſolder ſilver, as well as to give a luſtre. See Soldering.

BURNISHING, the art of ſmoothing or poliſhing a metalline body, by rubbing of it with a burniſher.

BURR, the round knob of a horn next a deer's head.

⁂ BURY St. EDMUND's, a corporation town in Suffolk, with a market on Wedneſdays. It is ſeated near a ſmall river, running on the eaſt-ſide of it, which becomes navigable as it advances towards Lynn. It was formerly famous for its abbey, which ſurpaſſes all others in England. It had three churches in its yard, two of which are yet ſtanding, and are handſome churches. The aſſizes for the county and the quarter-ſeſſions, for the liberty of St. Edmund's, are uſually kept here. It is governed by an alderman, a recorder, twelve capital burgeſſes, and twenty-four common council-men. It ſends two members to parliament. There is a very good grammar-ſchool. The houſes are well-built, but the ſtreets uneven. It has only one fair for millinery goods, butter, and cheeſe, but it continues for a fortnight. It is fourteen miles eaſt of Newmarket, and ſeventy-four north-north-eaſt of London. Long. 0. 36. E. Lat. 52. 20. N.

BURSA PASTORIS, ſhepherd's-purſe, in botany, a diſtinct genus of plants.

BURTHEN, in naval affairs, the weight or meaſure of any ſpecies of goods, &c. that a ſhip will carry.

BUSHEL, a meaſure of capacity for dry things, as grain, fruits, dry pulſe, &c. containing four pecks, or eight gallons, or one-eighth of a quarter.

* BUSIRIS, in fabulous hiſtory, king of Egypt, the ſon of Neptune and Lybia, was killed by Hercules, for ſacrificing ſtrangers, and treating them with cruelty. Melancthon, from his reſearches, thinks it probable that Buſiris was the Pharaoh who occaſioned the deſtruction of the new born ſons of the Iſraelites.

BUSKIN, a kind of ſhoe, ſomewhat like a boot, and adapted to either foot, and worn by either ſex.

This part of dreſs, covering both the foot and mid-leg, was tied underneath the knee; it was very rich and fine and principally uſed upon the ſtage by actors in tragedy. It was of a quadrangular form, and the ſole was ſo thick, as that by means thereof, men of ordinary ſtature might be raiſed to the pitch and elevation of the heroes they perſonated. The colour was generally purple on the ſtage: and was diſtinguiſhed from the ſock, worn in comedy, that being only a low common ſhoe. The buſkin ſeems to have been worn, not only by actors, but by girls, to raiſe their height; travellers and hunters alſo made uſe of it, to defend themſelves from the mire.

In claſſic authors, we frequently find the buſkin uſed to ſignify tragedy itſelf, it being a mark of tragedy on the ſtage.

It is alſo uſed to imply a lofty ſtrain, or high ſtyle.

BUSS, in maritime affairs, a ſmall ſea veſſel, uſed by us and the Dutch in the herring-fiſhery, commonly from forty-eight to ſixty tons burden, and ſometimes more.

BUST, or BUSTO, in ſculpture, &c. the figure or portrait of a perſon in relievo, ſhewing only the head, ſhoulders and ſtomach, the arms being lopped off: it is uſually placed on a pedeſtal or conſole.

BUSTARD, in ornithology, the Engliſh name of a genus of birds. See OTIS.

BUTCHER-BIRD, in ornithology. See LANIUS.

BUTCHER's-BROOM, *Ruſcus*, in botany. See RUSCUS.

BUTLER, *Buticularius*, the name anciently given to an officer in the court of France, being the ſame as the grand echanſon, or great cup-bearer of the preſent times.

BUTLER, an officer in the houſes of princes and great men, whoſe principal buſineſs is to look after the wine, plate, &c.

BUTMENTS, in architecture, thoſe ſupporters or props on or againſt which the feet of arches reſt. See BRIDGE.

BUTOMUS, the flowering-buſh, in botany, a genus of plants, ſaid to be of an apperient and deobſtruent quality.

BUTT, in naval affairs, the end of any plank in a ſhip's ſide, which cloſes with another: when a plank is looſened at one end by the labouring of a ſhip, or other accident, it is ſaid to be ſtarted.

BUTTER, a fat unctuous ſubſtance, prepared from milk by churning it. See DAIRY.

BUTTER, among chemiſts, a name given to ſeveral preparations, on account of their conſiſtence reſembling that of butter; as butter of antimony, butter of arſenic, of wax, of lead, of tin, &c.

BUTTER-BUR, in botany, the Engliſh name of a genus of plants, called by authors petaſites. See PETASITES.

BUTTER-FISH, a name given to the gunnellus.

BUTTERFLY, the Engliſh name of a numerous genus of inſects, called by zoologiſts, papilio. See PAPILIO.

BUTTERFLY-FISH, a ſpecies of the blennius of ichthyologiſts, with a furrow between the eyes. It is common in the American ſeas.

BUTTERFLY-FLOWER, a name given by ſome to the orchis.

BUTTERFLY-SHELL, in natural hiſtory, the Engliſh name of a ſpecies of voluta.

BUTTERIS, in the manege, an inſtrument of ſteel, fitted to a wooden handle, wherewith they pare the foot, or cut the hoof of an horſe.

BUTTER-MILK, a kind of ſerum that remains behind, after the butter is made. Of this, curds may be made; and the whey kept in a clean ſtrong veſſel, is an excellent cooling, wholeſome drink, to be uſed in the ſummer inſtead of other drink, and will quench the thirſt better than beer.

Butter-milk is excellent food, in the ſpring eſpecially, and particularly recommended in hectic fevers.

BUTTER-WORT, in botany, the Engliſh name of a diſtinct genus of plants, called by botaniſts pinguicula. See PINGUICULA.

BUTTERY, a room in the houſes of noblemen and gentlemen, belonging to the butler, where he depoſites the utenſils belonging to his office, as table linen, napkins, pots, tankards, glaſſes, ſalvers, &c.

BUTTOCK, in naval architecture, the round parts of a ſhip behind, under the ſtern, terminated by the counter above, and the after-part of the bilge below.

BUTTON, an article in dreſs, whoſe form and uſe are well known.

Buttons are made of various materials, as mohair, ſilk, horſe-hair, metal, &c.

Gold Twiſt BUTTONS. The mould of theſe buttons is firſt covered with ſilk in the ſame manner as that of common buttons. This being done, the whole is covered with a thin plate of gold or ſilver and then wrought over in different forms with purle and gimp. The former is a kind of thread compoſed of ſilk and gold wire twiſted together; and the latter, capillary tubes of gold or ſilver, about the tenth of an inch in length. Theſe are joined together by means of a fine needle filled with ſilk, thruſt through their apertures, in the ſame manner as beads or bugles.

The manner of making Metal BUTTONS. The metal with which the moulds are intended to be covered is firſt caſt into ſmall ingots, and then flatted into thin plates, or leaves, of the thickneſs intended, at the flatting-mills; after which it is cut into ſmall round pieces proportionable to the ſize of the mould they are intended to cover, by means of proper punches on a block of wood covered with a thick plate of lead. Each piece of metal thus cut out of the plate is reduced into the form of a button, by beating it ſucceſſively in ſeveral cavities, or concave moulds of a ſpherical form, with a convex puncheon of iron, always beginning with the ſhalloweſt cavity or mould, and proceeding to the deeper, till the plate has acquired the intended form: and the better to manage ſo thin a plate, they form ten, twelve, and ſometimes even twenty-four to the cavities, or concave moulds, at once; often nealing the metal, during the operation, to make it more ductile. This plate is generally called by workmen, the cap of the button.

The form being thus given to the plates, or caps, they ſtrike the intended impreſſion on the convex ſide by means of a ſimilar iron puncheon in a kind of mould engraven en creux, either by the hammer, or the preſs uſed in coining. The cavity or mould, wherein the impreſſion is to be made, is of a diameter and depth ſuitable to the ſort of button intended to be ſtruck in it; each kind requiring a particular mould. Between the puncheon and the plate is placed a thin piece of lead, called by workmen a hob which greatly contributes to the taking off all the ſtrokes of the engraving; the lead by reaſon of its ſoftneſs, eaſily giving way to the parts that have relievo; and as eaſily inſinuating itſelf into the traces and indentures.

The plate thus prepared makes the cap or ſhell of the button. The lower part is formed of another plate, in the ſame manner, but much flatter, and without any impreſſion. To the laſt or under plate is ſoldered, a ſmall eye made of wire, by which the button is to be faſtened.

The two plates being thus finiſhed, they are ſoldered together with ſoft ſolder, and then turned in a lathe. Generally indeed they uſe a wooden mould, inſtead of the under plate; and in order to faſten it, they paſs a thread or gut a-croſs, through the middle of the mould, and fill the cavity between the mould and the cap, with cement, in order to render the button firm and ſolid; for the cement entering all the cavities formed by the relievo of the other ſide, ſuſtains it, prevents its flattening, and preſerves its boſſe or deſign.

BUTTON, among gardeners, a flower or cluſter of leaves not yet expanded.

Buttons are a kind of ova, out of which ariſe either leaves alone, or intermixed with flowers. Leaf buttons are ſmaller and more pointed than flower buttons. Among trees which bear kernel fruit, each button produces ſeveral flowers; and among ſtone-fruit trees, each button yields but one flower.

BUTTRESS, a kind of butment built archwiſe, or a maſs of ſtone or brick, ſerving to prop or ſupport the ſides of a building, wall, &c. on the outſide, where it is either very high, or has any conſiderable load to ſuſtain on the other ſide, as a bank of earth &c.

BUXTON-WELLS, a place much frequented on account of its celebrated medicinal waters; which are the hotteſt in England, except thoſe of Bath.

Theſe waters greatly promote digeſtion, unleſs they are drank too long, in which caſe they relax the ſtomach, and retard all digeſtion: they are well adapted to obſtructions of every kind, whence they produce ſurpriſing effects in gouty, rheumatic, and ſcorbutic pains: their irritation and effects are relaxation and dilution; and wherever theſe are indicated, this water will be of the greateſt ſervice: it is of great benefit to thoſe obſtructions which ariſe from a ſharpneſs, ſaltneſs, or earthineſs of the blood and lymph, or from an accidental diſpoſition to a rarefaction of the blood. As this water is warm, highly impregnated with a mineral ſteam, vapour, or ſpirit, it is ſignally beneficial in cramps, convulſions, dry aſthmas, bilious cholic, ſtiffneſs, &c. They adviſe both drinking and bathing in the uſe of theſe waters; but the latter is of bad conſequence in the gout, inward inflammations, fevers, dyſentery, large and inward tumours, or in an outward preſſure of the body.

BUXUS, the *Box-Tree*, in botany, a genus of ever green ſhrubs, with numerous branches, clothed with firm, ſhining, ſomewhat oval leaves; the wood is of a yellow colour, and more compact and ponderous than any of the other European woods: the flowers are imperfect; the fruit which grows on a diſtinct part of the tree, is a green berry, divided into three cells, containing ſix ſmall ſeeds. It is found wild in ſome parts of England. It is ſaid that the leaves in ſubſtance, and infuſions or decoctions of them are aperient and purgative.

From experiments, it appears that box-wood contains little active matter; and that this matter is not of the pungent reſinous, but of the ſaline kind; and conſequently that it differs greatly from guaiacum wood, to which it is by many writers ſuppoſed to be ſimilar.

BUZZARD, *Buteo*, in ornithology, the Engliſh name of ſeveral ſpecies of the hawk-kind, diſtinguiſhed from each other by particular epithets; as, the bald buzzard, the common buzzard, the moor-buzzard, &c.

* BYBLIS, in fabulous hiſtory, the daughter of Miletus and Cyane, who falling paſſionately in love with her brother Caunus, he deteſting the thought of inceſt, fled from his country, and ſhe following him weeping, was turned, by the Naiades, into a fountain.

BY-LAWS, or BYE-LAWS, peculiar laws for the good government of a city, court, or other community, made by the general conſent of the members.

* BYNG, (GEORGE) lord viſcount Torrington, was born in 1663, and at fifteen went a volunteer to ſea, with the king's warrant. But in 1681, he quitted the ſea ſervice, upon the invitation of general Kirk, governor of Tangier, ſerved as a cadet in the grenadiers of that garriſon, and arrived to the rank of lieutenant. However, in 1684, after the demolition of Tangier, he was appointed lieutenant of the Orford, from which time he conſtantly kept to the ſea ſervice. The next year he went lieutenant of his Majeſty's ſhip the Phœnix, to the Eaſt-Indies, where engaging and boarding a Zinganian pirate, who maintained a deſperate fight, moſt of thoſe who entered with him were ſlain, himſelf greatly wounded, and the pirate ſinking, he was taken out of the ſea, with ſcarce any remains of life. He was, in 1702, raiſed to the command of the Naſſau, a third rate, and was at the taking and burning the French fleet at Vigo, and the next year he was made rear admiral of the red. In 1704, he commanded the ſquadron that took Gibraltar, and, in 1708, was made admiral of the blue, in 1711 admiral of the white, and in 1715 created a baronet. In the reign of queen Anne he prevented an invaſion in Scotland, and reſcued the city of Edinburgh from the threatened attack of a French ſquadron, which had numerous forces on board; and in the reign of Geo. I. when the diſcord of princes was on the point of embroiling Europe again in a war, he, with ſingular ſucceſs, interpoſed, and, with a Britiſh fleet, cruſhed, at one blow, the laboured efforts of Spain to ſet up a power at ſea, and advanced the reputation of our arms in the Mediterranean to ſuch a pitch, that the Britiſh flag gave laws to the contending parties, and enabled us to ſettle the tranquility that had been diſturbed. For this laſt important ſervice, George I. wrote him a letter of thanks with his own hand; his Imperial majeſty did the ſame, and alſo ſent him his picture ſet with large diamonds, and at home he was made treaſurer of the navy, rear-admiral of Great Britain, one of his majeſty's privy council, and ſoon after, in 1721, he was created viſcount Torrington, and baron Byng, of Southill, in Bedfordſhire; and, in 1725, he was made one of the knights of the Bath, upon the revival of that ancient and honourable order. His late majeſty, on his coming to the throne, appointed him firſt lord commiſſioner of the admiralty, in which high ſtation he died, in January, 1733, in the ſeventieth year of his age.

* BYNG (the honourable GEORGE), eſq. ſon of the former, was bred to the ſea, and roſe to the rank of admiral of the blue, in-

in which ſtation he was ſent with a Britiſh fleet, in 1756, to the relief of Fort St. Philip, in the iſland of Minorca, which had for ſome time been beſieged by the French. He arrived off Minorca, and on the 20th of May in that year, engaged the French fleet, commanded by M. Galiſſoniere; but this engagement ending very little to the ſatisfaction of the Engliſh nation, and Minorca being ſoon after ſurrendered to the enemy, Mr. Byng was ſent for home, and tried by a court-martial, which ended the 27th of January, 1757; when ſentence of death was paſſed upon him, for not doing his utmoſt to take, ſeize, and deſtroy the ſhips of the French king. The court unanimouſly agreeing that he fell under part of the twelfth article of the Act of the 22d of king George II. for amending the laws relating to the government of his majeſty's ſhips; but at the ſame time drew up an addreſs to the lords of the admiralty, praying them to recommend admiral Byng to his majeſty's clemency. But this addreſs not being attended with ſucceſs, he was ſhot on board the Monarque, in Portſmouth harbour, the 14th of March, 1757.

BYSSUS, in botany, a genus of moſſes, conſiſting of plain, ſimple, and capillary filaments. The byſſus is the moſt imperfect of all vegetables, no part of its fructification having been hitherto diſcovered: its filaments are uniform, and often ſo fine as to be ſcarce diſcernable ſingly; though in a cluſter, they make a kind of fine down. Botaniſts are not agreed whether the byſſus be properly a moſs or fungus. Linnæus is of the latter opinion, and the generality of botaniſts of the former.

BYSSUS, that fine Egyptian linen whereof the tunics of the Jewiſh prieſts were made.

BYZANT. See Bezant.

C

C, The third letter of the alphabet, is pronounced like *k*, before the vowels *a*, *o*, and *u*; but like *s*, before *e*, and *y*.

As an abbreviature, C ſtands for Caius, Carolus, Cæſar, *condemno*, *&c.* and C C for *conſulibus*

As a numeral, C ſignifies 100, C C 200, &c.

C, in muſic, after the cliff, intimates, that the muſic is in common time, which is either quick or ſlow, as it is joined with allegro or adagio: if alone, it is uſually adagio.

If the C be croſſed or turned, the firſt requires the air to be played quick, and the laſt very quick.

CAABA, a ſquare edifice of ſtone in the temple of Mecca, ſuppoſed to have been built by Abraham and his ſon Iſhmael: being the part principally reverenced by the Mahometans, and to which they always direct themſelves in prayer. The length of the caaba is about twenty-four cubits, its breadth twenty-three, and height twenty-ſeven cubits; the door, which is on the eaſt-ſide, is four cubits from the ground, and the floor level with the bottom of the door. In the corner next this door is the famous black ſtone, which is ſet in ſilver, and exceedingly reſpected by the mahometans. The pilgrims kiſs it with great devotion, and it is by ſome called the right hand of God on earth. It is fabled to be one of the precious ſtones of Paradiſe, which fell down to the earth with Adam, and being taken up again at the deluge, was brought back by the angel Gabriel to Abraham, when he was building the caaba.

CAB, or KAB, a Hebrew meaſure of capacity. The cab of wine contained two Engliſh pints; the cab of corn 2 5-6ths pints, corn meaſure.

CABALA *Vein*, in natural hiſtory, a name given by the Suſſex miners to one kind of the iron ore commonly wrought in that country. It is a ſtony ore, of a browniſh colour, with a bluſh of red, which is more or leſs conſpicuous in different parts of the ſame maſſes.

CABBAGE, *Braſſica*, in botany, a genus of plants; of which Tournefort has enumerated 25, and Mr. Miller 22, ſpecies. All the common ſorts of cabbages are largely cultivated about London. The common, white, red, flat, and long-ſided ones, are chiefly for winter uſe. The ſeeds of theſe ſorts muſt therefore be ſown in the middle of March, in beds of good freſh earth; and in April, when the young plants will have about eight leaves a-piece, they are to be pricked out into ſhady borders, about three inches ſquare; and about the middle of May they muſt be tranſplanted to the places where they are to remain; and this is commonly between cauliflowers or artichokes, at about two feet diſtance in the rows. They muſt be watered at times, and the earth muſt be hoed up about their roots, and kept clear from the weeds.

Theſe cabbages will be fit for uſe ſoon after Michaelmas, and will continue till February, if not deſtroyed by bad weather; to prevent which the gardeners about London pull up their cabbages about November, and trench the ground in ridges, laying their cabbages againſt the ridges, as cloſe as poſſible on one ſide, burying their ſtems in the ground; and in this manner they let them remain till after Chriſtmas, when they cut them for the market.

The Ruſſian cabbage is ſmall, and not much cultivated now. It is to be raiſed as the others, but may be planted nearer, as not being ſo large. It is fit for uſe in July.

The early Batterſea and ſugar-loaf cabbages are ſown for ſummer uſe, and are commonly called Michaelmas cabbages. The ſeaſon for ſowing theſe is the beginning of July, in an open ſpot of ground. It is common to ſow ſpinage in the ſame beds with theſe, hoeing it up from about their ſtalks in ſpring: in May and June theſe begin to turn their leaves for cabbaging, and may be brought to it much ſooner than naturally they would, by tying them about with an ozier band.

The Savoy cabbages are for winter uſe, and are to be ſown about the beginning of April; they are to be treated as the common cabbage, and planted out at two feet diſtance, in an open place.

The bore-cole may be cultivated in the ſame manner, but muſt be planted only at one foot diſtance; theſe are not fit to cut till the froſts have nipped them.

The method of getting good cabbage ſeed is this: chooſe out ſome fair plants in October, pull them up, and hang them up three days, with the root upward, in a ſhady place; then plant them under a warm hedge, burying the whole ſtalk and half the cabbage in the earth; cover them with culm, if the winter be ſevere, and in ſpring they will ſhoot out many branches. When theſe begin to pod, the ends of the upper ones ſhould be cut off, to give ſtrength to the other pods. The ſeeds muſt be preſerved from the birds, by planting ſome lime-twigs about the plants, where the catching one or two will intimidate the reſt. When ripe it muſt be threſhed out, and kept for uſe. *Miller's Gardener's Dictionary.*

Anjou CABBAGE, a large cabbage ſhrub, which grows in the province of the Lower Mayne in France, where it is cultivated with great advantage.

CABBAGE-TREE, *palma maxima* or *palmeto royal*, a very beautiful tree, common in ſeveral parts of America.

It has acquired the name of royal from its remarkable height, majeſtic appearance, and elegance of its waving foliage: neither the tall cedars of Lebanon, nor any of the trees of the foreſt, are equal to it in height, beauty, or proportion. It is generally as ſtraight as an arrow; and ſcarce can a pillar of the niceſt order in architecture be more regular, eſpecially when it is of about thirty years growth: and as there is a natural involuntary pleaſure ariſing from the harmony of juſt geometrical proportions, ſtriking the eye of the moſt unſkilful and ignorant beholder, it is not ſtrange that theſe trees are univerſally admired. Writers of wonders repreſent ſome of them to be three hundred feet in height: however, Mr. Hughes informs us, that in Barbadoes, where they are more numerous than in the other iſlands, that they do not exceed one hundred and thirty-four feet.

The trunk of this tree, near the earth, is about ſeven feet in circumference, the whole body growing tapering to the top.

CABBAGING, among gardeners, a term uſed for the knitting of cabbages into round heads.

CABBALA, among the Jews, is properly the myſtical interpretations of their ſcriptures, handed down by tradition. The word is Hebrew, and literally ſignifies traditions.

The cabbala is, properly, the oral law of the Jews, delivered down, by word of mouth, from father to ſon: and it is to theſe interpretations of the written law our Saviour's cenſure is to be applied, when he reproves the Jews for "making the commands of God of none effect through their traditions.

CABBALISTS, thoſe Jewiſh doctors who profeſs the ſtudy of the cabbala. In the opinion of theſe men, there is not a word, letter, or accent, in the law, without ſome myſtery in it.

CABECA, or CABESSE, a name given to the fineſt ſilks in the Eaſt-Indies.

CABIN, in naval architecture, an apartment in a ſhip for any of the officers to eat, drink, and ſleep in. The great cabin is chiefly intended for the captain or principal officer; but there are beſides theſe ſeveral of a ſmaller kind for the inferior officers. The bed-places of the ſailors, if they are built up at the ſhip's-ſide between decks, which is often the caſe in the merchant ſhips, are likewiſe denominated cabins.

CABINET, is a kind of preſs or cheſt, with ſeveral doors and drawers to lock up the moſt precious things, or only to ſerve as an ornament in chambers, galleries, or other apartments. There are common cabinets of oak, or of cheſnut; varniſhed cabinets of China and Japan; cabinets of inlaid work; ſome of ebony, and other ſcarce and precious woods.

CABINET *of natural Hiſtory*, a building containing all the curioſities of nature, digeſted in a proper manner. Such a building might indeed be called, with more propriety, a muſæum or repoſitory; cabinet here, therefore muſt be underſtood in a larger ſenſe than the common acceptation of the word, as herein are exhibited to our view the animal, vegetable, and mineral kingdoms at once: in ſhort, an epitome of nature.

The knowledge of natural hiſtory improves, as collections of this kind are made more perfect; and our own age has firſt ſet on foot eſtabliſhments that deſerve the name of cabinets of natural hiſtory.

CABLES, in naval affairs, thick ſtrong ropes, compoſed of hemp, baſs, or Indian graſs, uſed to retain a ſhip at anchor in a proper place, where ſhe may want to remain. See ANCHOR.

All ſhips have, or ought to have, at leaſt three cables, the ſheet cable, and the two bowers, beſt and ſmall.

Cable is alſo ſaid of ropes which ſerve to raiſe heavy loads by the help of cranes, pullies, and other engines. The name of cable is uſually given to ſuch as have at leaſt three inches in diameter.

Every cable, of what thickneſs ſo ever, is compoſed of three ſtrands, each of which is formed of three ſmaller ſtrands, and each of thoſe of a certain number of rope-yarns, which is more or leſs in proportion to the ſize of the cable.

The number of threads each cable is compoſed of being thus always proportioned to its length and thickneſs, its weight and value are determined by this number of threads: thus a cable of nine inches in circumference ought to conſiſt of three hundred and ninety-three rope-yarns, and weigh one thouſand five hundred and ſeventy-two pounds; and on this foundation is calculated the following table, very uſeful for all perſons engaged in marine commerce, who either fit out merchantmen on their own account, or freight them for the account of others.

A table of the number of threads and weight of cables of different circumferences.

Circumference in inches.	Threads, or rope-yarns.	Weight in pounds.
9	393	1572
10	485	1940
11	598	2392
12	699	2796
13	821	3284
14	952	3808
15	1093	4372
16	1244	4976
17	1404	5616
18	1574	6296
19	1754	7016
20	1943	7772

To ſerve the CABLE is to bind it about with ropes or other materials to keep it from being galled or chafed in the hawſe. See HAWSE.

Splicing the CABLE is to interweave the ends of two cables together, or the two ends of one that had been broke.

Pay away the CABLE is to let more out of the ſhip.

CABOCHED, in heraldry, is when the heads of beaſts are borne without any part of the neck, full faced.

CACAO, the chocolate-tree, in botany, a genus of trees. See THEOBROMA. The fruit of this tree is an oblong roundiſh nut, the produce of a ſmall American tree, bearing a large red pod, ſhaped like a cucumber, which contains thirty or more of the nuts. There are ſeveral ſorts of theſe nuts in the ſhops, diſtinguiſhed by their ſize, and the place whence they are brought: the larger kind, from the province of Nicaragua in Mexico, is moſt eſteemed.

Cacao nuts have a light agreeable ſmell, and an unctuous, bitteriſh, roughiſh, not ungrateful taſte: thoſe of Nicaragua and Caracco are the moſt agreeable; thoſe of the French Antilles, and our own American iſlands, the moſt unctuous. All the ſorts, thoroughly comminuted and committed to the preſs, yield a conſiderable quantity of a fluid oil, which is not liable to grow rancid in long keeping; and hence is recommended as a baſis for odoriferous unguents, and the compoſitions called apoplectic balſams: but the principal uſe of theſe nuts is for the preparation of the dietetic liquor, chocolate; a mild unctuous fluid, ſuppoſed to be ſerviceable in conſumptive diſorders, emaciations, and an acrimonious ſtate of the juices in the firſt paſſages. See CHOCOLATE.

CACHEXIA, an univerſal bad habit of body, proceeding from a defect in nutrition, which muſt ariſe either from a depravation of the nutritious juices, or a defect in the veſſels which ought to receive theſe juices; or a deficiency in that action of the animal œconomy, by which a part of the circulating juices is applied to the ſolids for their nutrition.

The nutritious juices are depraved by aliments which are ſuperior to the powers of digeſtion; that is, which cannot be digeſted and aſſimilated by the proper organs. Of this ſort are all crude, farinaceous, and legumine vegetables, which, on a weak ſtomach, are ſubject to form a kind of tenacious paſte. Add to theſe all ſorts of food which are hard, fibrous, fat, acrid, aqueous, and viſcid. Among theſe may juſtly be reckoned ſome indigeſtible ſubſtances which depraved appetites ſometimes covet, as cinders, chalk, ſand, or lime.

Theſe defects, in the organs of digeſtion, are brought about in various manners; as by all profuſe ſecretions of what kind ſoever, as violent vomitings, diarrhœas, dyſenteries, or hæmorrhages; by a ſchirrous diſorder of any of the viſcera; or by a retention of ſomething in the body which ought to be excreted.

According to the different colour, bulk, tenacity, acrimony, and fluidity of the ſtagnating liquids, various appearances ariſe, which may be eſteemed ſymptoms of a cachexy. Thus, the ſkin appears white, yellow, livid, red, green, black, or tawny; the patient perceives a ſenſation of gravity; tumours ariſe under the eyes, and affect the more thin parts of the body. Add to theſe flatulencies and œdematous tumours of the parts remote from the heart; palpitations of the heart and arteries, which are augmented by the leaſt motion; crude and thin urine; ſpontaneous and evidently watery ſweats; all which are ſucceeded by emaciation of a leuchophlegmatia, and dropſy.

The principal rules to be obſerved in the cure are,

Firſt, to adminiſter ſuch aliment as approaches nearly to the nature of the healthful fluids of the body, which are eaſily digeſtible; which are in their nature oppoſite to the cauſe of the diſorder; and which are agreeable to the patient.

Secondly, to promote the digeſtion of ſuch aliments, by ſeaſoning them with proper aromatics; by drinking proper quantities of generous wine; and by exerciſe and air.

Thirdly, to diſpoſe the organs of digeſtion to perform their duties by proper gentle digeſtives, vomits, purges, and corroborants.

Fourthly, as ſoon as the paſſages are relaxed, and the morbid matter is attenuated, to promote its expulſion, by attenuating diuretics, and ſudorifics.

Laſtly, to complete the cure by chalybeats, alkaline and ſaponaceous ſubſtances, together with walking, riding, or other proper exerciſes, frictions and baths.

The cauſe, however, of this diſtemper only can determine the choice of all theſe, and the manner of applying them.

When a cachectic conſumption ariſes from too great an acrimony of the juices, the particular ſpecies of acrimony muſt, if poſſible, be diſcovered. *Boer. Aph.*

CACTUS, in botany, a genus of plants, comprehending the torch-thiſtle, melon-thiſtle, pereſkia, and cochineal plant: It is a culinary plant, which is blanched like celery, and, like that, eaten raw with pepper and ſalt in Italy. In the medicinal virtues it agrees with the cynara, or artichoke.

CADE, a cag, caſk, or barrel. A cade of herrings is a veſſel containing the quantity of five hundred red herrings, or of ſprats one thouſand.

* CADE, (JACK) killed by Alexander Iden, ſheriff of Kent, in 1451.

CADE-OIL, an oil much uſed in France and Germany. It is prepared from a fruit of a ſpecies of cedar, called oxycedrus.

CADENCE, in ancient muſic, a ſeries of a certain number of notes, in a certain interval, which ſtrike the ear agreeably, and eſpecially at the end of a ſong, ſtanza, &c. It conſiſts ordinarily of three notes. Cadence, in the modern muſic, may be defined a certain concluſion of a ſong, or the parts of a ſong, which divide it, as it were, into ſo many numbers or periods. It is when the parts terminate in a chord or note, the ear ſeeming naturally to expect it; and is much the ſame in a ſong as the period that cloſes the ſenſe in a paragraph in diſcourſe.

All cadences are to be accommodated to the characters of the airs.

Cadence, with ſome French muſicians, is ſynonymous with a ſhake. See SHAKE.

CADENCE, in the manage, an equal meaſure or proportion obſerved by a horſe in all his motions.

CADENCE, in rhetoric and poetry, the running of verſe or proſe, otherwiſe called the numbers.

CADET, a military term, denoting a young gentleman who chuſes to carry arms in a marching regiment, as a private man. His views are to acquire ſome knowledge in the art of war, and to obtain a commiſſion in the army. Cadet differs from volunteer, as the former takes pay, and the latter ſerves without any pay.

CADI, or **CADHI**, a judge of the civil affairs in the Turkiſh empire.

It is generally taken for the judge of a town, judges of provinces being diſtinguiſhed by the appellation of mollahs.

In Biledulgerid, in America, the cadi decides in ſpiritual affairs.

* **CADIZ**, by the Romans called *Cades*, by the *Phœnicians*, *Gadir*, or *Gaddir*. The Tyrants firſt built it; and after them it was poſſeſſed by the Carthaginians, from whom it came under the dominion of the Romans. It is a famous trading-city of Andaluſia, in Spain, lying on the N. W. extremity of the long and irregular neck of land of an iſland which extends itſelf from S. E. to N. W. the eaſtern part of which is called Cadiz, and the S. E. part the iſland of Leon. It is joined to the main-land, from which only a narrow channel or arm of the ſea ſeparates it, by means of the bridge Suaco, both ends of this being defended by redoubts, and other works thrown up of earth. The iſland, from Fort St. Catalina to the iſland of Pedro, is five miles long, and from the S. point near the latter to the N. point juſt by the above-mentioned bridge, almoſt two miles broad. It produces little corn, but the beſt Spaniſh wine; and upon it are ſome paſture grounds, and on the ſide of the harbour great quantities of ſalt are made. The fiſhery here is alſo very conſiderable; and particularly great numbers of tunny-fiſh are catched, which are commonly from ſix to eight, and ſometimes ten feet long. The neck of land which extends itſelf from the iſland, and quadrangular in ſome meaſure, is at firſt but very narrow; afterwards it becomes ſomething broader, with ſeveral windings and angles, terminating at laſt in two headlands, the principal and moſt weſterly of which is called St. Sebaſtiano.

The city of Cadiz is pretty large in circuit: yet all the large end of the neck of land is not built upon, and the delightful W. ſide, which is called Sancto Campo or the Church-court, is almoſt uninhabited, the only building upon it being a ſpacious hoſpital, and two chapels, on account of its being not ſo commodious for the landing of veſſels as the E. ſide.

Moſt of the ſtreets of Cadiz are narrow, crooked, indifferently paved, and dirty: but ſome of them are broad, ſtrait, and well-paved. The houſes are generally between three and four ſtories high; nearly all of them have a quadrangular area, and ſeveral of theſe are very handſome. Here lodgings and proviſions are in general dear. The city is in want of freſh-water: and in it are reckoned 13 convents; among which is alſo a Jeſuits college, ſaid to be the fineſt in all Andaluſia; yet has but one pariſh-church, which is the cathedral; though the number of its ordinary inhabitants amounts to 40,000, and it contains about 5000 houſes. Its Biſhop is a ſuffragan to the Metropolitan of Seville. Here is the royal audience of the Indies, or the Indian board of trade, removed hither from Seville. Both before and after the arrival of the Spaniſh flota from America, and their ſailing from Cadiz thither again, this place is very briſk and ſtirring, from the great number of ſtrangers, who come hither for the ſake of trade. It is the center of all the American trade, to which port the Engliſh, French, Dutch, and Italian merchants ſend their goods, which Spaniſh factors, in their reſpective names, put on board the ſhips for America. Beſides theſe juſt-mentioned, all others who trade by ſea, have their agents, correſpondents, and commiſſioners, at Cadiz; and the conſuls and the aforeſaid nations make a conſiderable figure here.

No people are happier than the trading ſort in Cadiz; for they ſeldom riſk any thing upon their own account, and enrich themſelves at the coſt of thoſe who ſend them goods: let things go as they will, they are at no loſs. What goods are ſent from Spain itſelf to America are but very inconſiderable. The duty paid by foreign goods is uncommonly great; conſequently the profits of the merchants and their agents are leſs than they might otherwiſe be, were they ſufficiently acquainted with the methods of importing their goods duty-free. The harbour and bay of Cadiz is very fine and ſpacious; and for the defence of the entrance into it, is not only Fort Matagorda, but alſo Fort Puntal, lying oppoſite to it upon a point of the neck of land on which Cadiz ſtands.

The Spaniards commonly call both theſe Los Puntales. Between them and the points of land on which the two forts ſtand, the entrance into the harbour, according to Labat, is about five hundred fathoms broad. At ebb-tide a great part of the harbour, which is ſaid to be ten French leagues in circuit, lies dry. The outer and furthermoſt bay, which begins between Rota and St. Sebaſtian, and which extends itſelf to Puerto de Santa Maria, is divided into two parts by the rocks Los Pueros and Diamante.

Cadiz is ſurrounded with walls and irregular baſtions, as the ſituation of the ground would admit of. There is no approaching to the S. ſide, on accouut of its high and ſteep ſhore. At preſent it is dangerous landing on the N. ſide, as here are ſand-banks and rocks under water: but on the S. W. ſide there is a landing-place, at which ſtands a ſmall fort called St. Catalina. Towards the S. W. point is a ridge of rocks, which at time of flood are partly covered with water. The outtermoſt of theſe is a ſmall iſland, upon which is a watch-tower and light-houſe, together with two chapels: as alſo Fort St. Sebaſtian ſtands there.

Cadiz lies 40 miles from Gibraltar. Lat. 36 deg. 30 min. N. Long. 6 deg. 40. min. W.

CADUCEUS, in antiquity, Mercury's rod, or ſceptre, being a wand entwiſted by two ſerpents, borne by him as the enſign of his quality and offices given him, according to the fable, by Apollo, for his ſeven-ſtringed harp.

CÆCELIA, in zoology, the name of a genus of ſerpents, the characters of which are theſe: the body is naked with wrinkled ſides; the upper lip is prominent beyond the reſt of the mouth, and has two tentacula; it has no tail.

Of this genus, authors enumerate ſeveral ſpecies, diſtinguiſhed by the number of their rugæ or wrinkles.

CÆCUM, or COECUM, in anatomy, the blind gut, or firſt of the thick inteſtines.

CÆSAR, in Roman antiquity, a title borne by all the emperors, from Julius Cæſar to the deſtruction of the empire. It was alſo uſed as a title of diſtinction, for the intended or preſumptive heir of the empire, as king of the Romans is now uſed for that of the German empire. This title took its riſe from the ſurname of the firſt emperor, C. Julius Cæſar, which, by a decree of the ſenate, all the ſucceeding emperors were to bear. Under his ſucceſſor, the appellation of Auguſtus being appropriated to the emperors, in compliment to that prince, the title of Cæſar was given to the ſecond perſon in the empire, though ſtill continued to be given to the firſt; and hence the difference betwixt Cæſar uſed ſimply, and Cæſar with the addition of Imperator Auguſtus.

CÆSARIAN SECTION, in midwifry, a chirurgical operation, by which the fœtus is delivered from the womb when it cannot be done in the natural way.

CÆSTUS, in antiquity, a large gantlet made of raw hides, uſed by the wreſtlers when they fought at the public games. This was a kind of leathern ſtrap, ſtrengthened with lead, or plates of iron, which encompaſſed the hand, the wriſt, and a part of the arm, not only to defend thoſe parts but to enforce their blows.

CESTUS, or CÆSTUM, a kind of girdle made of wool, which the huſband untied for his ſpouſe the firſt day of marriage, before they went to bed. This relates to Venus's girdle, which Juno borrowed to entice Jupiter to love her. See Cestus.

CÆSURA, in the ancient poetry, is when, in the ſcanning of a verſe, a word is divided ſo as one part ſeems cut off, and goes to a different foot from the reſt.

CÆSURA, in the modern poetry, denotes a reſt, or pauſe, towards the middle of an Alexandrine verſe, by which the voice and pronunciation are aided, and the verſe, as it were, divided into two hemiſtichs.

In Alexandrine verſe of twelve or thirteen ſyllables, the cæſura muſt always be on the ſixth; in thoſe of ten, on the fourth; and in thoſe of twelve, on the ſixth: verſes of eight ſyllables, muſt not have any cæſura.

CÆTERIS PARIBUS, a Latin term frequently uſed by mathematical and phyſical writers; the words literally ſignifying the reſt, being alike, or equal. Thus we ſay, the heavier the bullet, *cæteris paribus*, the greater the range; that is, by how much the bullet is heavier, if the length and diameter of the piece, and the quantity and ſtrength of the powder be the ſame, by ſo much will the utmoſt range or diſtance of a piece of ordance be greater.

Thus alſo, in a phyſical way, we ſay, the velocity and quantity of the blood circulating, in a given time, through any ſection of an artery, will, *cæteris paribus*, be according to its diameter, and nearneſs to, or diſtance from, the heart.

CAFFA, in commerce, painted cotton cloths manufactured in the Eaſt-Indies.

CAG, or KEG, or ſturgeon, &c. a barrel or veſſel that contains from four to five gallons.

CAIMACAN, or CAIMACAM, a dignity in the Ottoman empire, anſwering to lieutenant, or rather deputy among us.

* CAIRO, Grand, the capital of Egypt, in Africa. It is ſituated a mile from the the river Nile, and extends eaſtward near two miles to the neighbouring mountain; it is about ſeven miles round, and was much larger than at preſent, when it was the center of trade in the Eaſt Indies, and walled round; part of the walls of free-ſtone, remaining to the North Eaſt of the caſtle, where they make an angle, turning from North to Weſt: there are alſo ſome remains of them to the ſouth of the caſtle, going towards the aqueduct: they are built with ſemicircular towers: there are likewiſe three or four grand gates that were built by the Marmalukes; the workmanſhip of which is very magnificent. One of them to the ſouth is called Babel Zuile from a ſuburb of that name it leads to. Under the arch of the gate is a piece of a rope faſtened to a hook, where Toman Bey, the laſt Marmaluke Sultan, was hanged by order of Sultan Selim. Another gate is Babel Naſſer, through which Sultan Selim made his public entry. A little to the ſouth of it is a gate ſtill more magnificent, which is called Babel Futuh, that is, the gate of victory; it is of hewn ſtone, very high, and has a ſquare tower on each ſide, the water tables of which are richly adorned with ſculptures.

The canal that comes out of the Nile at Old Cairo, goes all through the city, though it is ſeen only from the back of the houſes that are built on it; but when it is dry, it is a ſtreet, along which the common people frequently go. However, towards the time it begins to be dry, a ſtench ariſes from it that is very diſagreeable. If one imagines that there are ſeveral ſquares or places about the city, from a quarter to three quarters of a mile round, contrived ſo as to receive and hold the water of the Nile that is conveyed to them by the canals; when the river riſes, it may give ſome idea of the ſeveral lakes that are about the city during the greater part of the year, round which the beſt houſes in the city are built; and when the Nile is high in the ſummer, they are covered with fine boats and barges of all the great people, who come out in the evening to divert themſelves with their ladies, where concerts of muſic are never wanting, and ſometimes fire-works add to the amuſement; all the houſes round being in a manner illuminated, and the windows full of ſpectators to behold this ſplendid ſight. The ſcene is much altered when the waters are gone off, and nothing but mud appears; but is ſoon ſucceeded by a more agreeable view of green corn, and afterwards of harveſt.

The ſtreets of Cairo, as of all the Turkiſh cities, are very narrow. Turkiſh houſes, eſpecially in Cairo, have very little beauty on the outſide; they are generally built round a court, what they have of ornament being in their ſaloons within. There are ſeveral magnificent moſques in and about Cairo; but that which exceeds them all, both as to the ſolidity of its building, and a certain ſtriking magnificence, is the moſque of Sultan Haſſan, built at the foot of the caſtle-hill.

A part of the town to the S. is called Tailoun, founded by Tholoun, who was maſter of Egypt, in ſuch a manner as to be almoſt independent of the Califfs. What remains of the ancient palace goes by the name of Kalatel-Kebſh. There are the remains of the caſtle walls, and high ground within them, raiſed by throwing out the dung of the city, and afterwards building on it, though to the W. there was a natural rock. In this wall is a ſort of ſquare turret, which they call the ſeat of Pharaoh; near it, under an arch, is an ancient ſarophagus of black marble, which receives the water of a conduit. It is richly adorned both inſide and out with hieroglyphics.

To the E. of Tailoun is the caſtle of Cairo, ſituated on a rocky hill, ſeparated by art from the mountain Jebel Duiſe, which is the name of the E. end of Jebel Mocattham. There are two entrances to it on the N. ſide; one to the W. is called the gate of the Azabes; the other to the E. the gate of the Janizaries. The deſcent by the former is narrow, cut through the rock, and paſſing by two round towers near the gate, and then by a fine large, round tower: the way is by a high wall, on which, at a great height, is a relief of a very large ſpread eagle, and ſo the entrance is oppoſite to the building that is called Joſeph's hall. The aſcent by the gate of the janizaries is more ſpacious and grand ; on each ſide of the inner gate is a tower of many ſides ; and further on, at another entrance, is a large round tower on each ſide, oppoſite to the great moſque. At the W. of the caſtle are remains of very grand apartments, ſome of them covered with domes, and adorned with Moſaic pictures of trees and houſes. This part of the caſtle is now only uſed for weaving, embroidering, and preparing the hangings and coverings they ſend every year to Mocca.

Over this is a higher ground to the Eaſt, near the grand ſaloon, commonly called Joſeph's-hall, from which there is a moſt delightful proſpect of Cairo, the pyramids, and all the country round. It lies 100 miles South of the mouth of the Nile, Lat. 30 deg. 15 min. N. Long. 32 deg. 12 min. E.

CAISSON, in military affairs, a wooden cheſt, into which ſeveral bombs are put and ſometimes only filled with gunpowder; this is buried under ſome work whereof the enemy intend to poſſeſs themſelves ; and when they are maſters of it, is fired, in order to blow them up.

CAISSON, a wooden frame, or cheſt, uſed in laying the foundations of the piers of a bridge.

CALABA, Indian maſtich-tree, in botany, a genus of trees, it has a roſaceous flower, conſiſting of ſeveral petals, which are placed in circular order ; from whoſe flower-cup ariſes the pointal, which afterwards becomes a ſpherical fleſhy fruit, including a nut of the ſame form. This tree grows to a great magnitude in the warm parts of America, where it is a native. From the trunk and branches there iſſues out a clear gum, ſomewhat like the maſtich, from whence it received its name; the gum being uſed in thoſe countries as maſtich.

At preſent this tree is pretty rare in England, it being ſo tender as not to bear the open air : ſo that it muſt be preſerved in ſtoves, with the moſt tender exotic plants.

CALABASH-TREE, the ſame with the creſcentian of Linnæus.

CALADE, in the manage, the deſcent or ſloping declivity of a riſing manege-ground, being a ſmall eminence upon which we ride down a horſe ſeveral times, putting him to a ſhort gallop, with his fore hams in the air, to make him learn to ply or bend his haunches, and form his ſtop upon the aids of the calves of the legs, the ſtay of the bridle, and the caveſon, ſeaſonably given.

* CALAIS, a fortified town of France, in Lower Picardy, was began to be fortified in 1228, at which time a caſtle was built. In 1347, Edward III. of England took it by famine. The Engliſh kept it till January, 1558, when it was retaken by the duke of Guiſe. The ſituation of this place renders it more conſiderable than the number of its inhabitants, which are not above five thouſand, and it has but one pariſh, and four convents. Hither the packet boats come from Dover in England twice a week, in times of peace. The figure of this place is an oblong ſquare, and one of its longeſt ſides is towards the ſea. On the ſide of the country it is fortified with baſtions, and a half moon, beyond which are ditches fifty yards wide, which may be filled with water at pleaſure. The caſtle is as large as the town, and can only be entered by the bridge of St. Agatha. This likewiſe is ſurrounded with large deep ditches, full of ſea water. The church, the town-houſe, and the convents are the only places worth ſeeing. There is a canal which runs from it to St. Omers, Gaveline, Dunkirk, Bruges, and Ypres. It is twenty-one miles ſouth-eaſt of Dover, twenty-five weſt of Dunkirk, fifty-five north of Abbeville, ninety ſouth-eaſt of London, and one hundred and fifty-two north of Paris. Long. 2. 6. E. Lat. 50. 58. N.

CALAMBA, or CALAMBAC-WOOD, the beſt of lignum-aloes.

CALAMANCO, a ſort of woollen ſtuff manufactured in England and in Brabant. It has a fine gloſs, and is chequered in the warp, whence the checks appear only on the right ſide. Some calamancoes are quite plain, others have broad ſtripes adorned with flowers; ſome with plain broad ſtripes, ſome with narrow ſtripes, and others watered.

CALAMIFEROUS, among botaniſts. See CULMIFEROUS.

CALAMINARIS, or LAPIS CALAMINARIS, in natural hiſtory, a mineral ſubſtance, of a greyiſh, browniſh, yellowiſh, or pale reddiſh colour, and ſometimes of all theſe colours variouſly mixed ; conſiderably heavy, and moderately hard; but never ſufficiently ſo as to ſtrike fire with ſteel; when mixed with powdered charcoal, changing copper, by fuſion, into a yellow metal called braſs. It is found plentifully in England, Germany, and other countries, either in diſtinct mines, intermingled with the ores of lead or other metals. This ore of zinc, employed principally for the making of braſs, is for that purpoſe roaſted or calcined, partly with a view to diſſipate ſome ſulphureous matter, which the crude mineral is ſuppoſed to contain; but chiefly to render it friable, and more eaſily reducible into fine powder. It is with the ore thus calcined, that the ſhops are generally ſupplied: where this cannot be procured, the mineral is heated to a ſtrong red heat, then quenched in water, and this proceſs repeated thrice. The roaſted calamine is levigated into an impalpable powder, which may be freed from the groſſer particles by waſhing it over with water. In this ſtate it proves, for external purpoſes, an excellent reſtringent, deſiccative, and epulotic; of great uſe in collyria, againſt defluxions of thin acrid humours upon the eyes; and in unguents and cefates, for cutaneous ulcerations and excoriations. The officinal epulotic cerate, commonly called Turner's, is made by melting ſix ounces of yellow wax in a pint of oil olive, over a gentle fire, ſprinkling in ſix ounces of levigated calamine as ſoon as the mixture begins to grow ſtiff, and keeping the whole ſtirring till grown quite cold. The college of Edinburgh diminiſhes the proportion of the calamine, uſing only five ounces and a quarter to a pint of oil, with nine ounces of wax.

CALAMINT, *Calamintha*, in botany, a diſtinct genus of plants, which is perennial, and flowers in June and July. There are three ſpecies of this plant uſed in medicine; namely.

1. Calamint, with reclining ſtalks; ſmall irregularly oval leaves, very ſlightly indented, without pedicles; and the flower ſtalks longer than the leaves. This ſpecies grows wild in dry grounds, and by the ſides of fields.

2. Common Calamint, with upright ſtalks; larger, ſhort, ſerrated, pointed leaves, ſet on pedicles; and the flower-ſtalks of the length of the leaves. It is found wild about the ſides of highways, but is leſs common in this country than the other.

This ſpecies is ſuppoſed to agree in virtue, and has been uſed indiſcriminately with the former; ſhops being generally ſupplied with the ſpecies which is moſt eaſily procurable.

3. Mountain Calamint, with larger leaves and flowers than the two preceding, but ſmaller ſtalks; the leaves ſet on pedicles, pointed, acutely and deeply ſerrated like thoſe of nettles; the flower-ſtalks ſhorter than the leaves, and of the length of the flowers themſelves. It is a native of the ſouthern parts of Europe, and raiſed with us in gardens.

This ſpecies has a moderately pungent taſte, and a more agreeable aromantic ſmell than either of the other calamints. It appears to be the moſt eligible of the three as a ſtomachic.

CALAMUS AROMATICUS, or, ACORUS VERUS, in the materia medica, is the root of a kind of flag growing in marſhy places in ſome parts of Europe: it is pretty long, full of joints, of a whitiſh, reddiſh, and partly of a greeniſh colour on the outſide, white and ſpongy within, eaſy to break, of a ſtrong aromantic ſmell, and a warm pungent taſte. In firm grounds, it ſpreads into many ſlender ſtrings, which in mere watery ones it does not.

CALAMUS SCRIPTORIUS, in anatomy, a dilatition of the fourth ventricle of the brain; ſo called from its figure, which reſembles that of a gooſe-quill.

CALOSH, or CALESH, a light low kind of chariot, uſed chiefly for taking the air in parks and gardens.

Knights of CALATRAVA, a military order in Spain, inſtituted under Sancho III. king of Caſtile. The knights of Calatrava bear a croſs gules, fleurdeliſed with green, &c. their rule and habit was originally that of the Ciſternians.

CALCANEUM, or OS CALCIS, in anatomy, the bone lying under the aſtragulus, to which, and the os cuboides, it is articulated. Its apophyſis behind ſerves to prevent our falling backwards, and on its poſterior ſurface is inſerted the tendo achillis; in its interior ſide there is an excavation, intended to give ſafe paſſage to the veſſels running to the metatarſus and toes.

CALCAR, in anatomy, the ſame with calcaneum. See CALCANEUM.

CALCAR, in glaſs-making, a ſort of oven, or reverberatory furnace, in which being well heated, the chryſtal frit, or bollito is made.

CALCARIOUS, ſomething belonging to, or partaking of, the nature of calx. See CALX.

CALCARIOUS LAPIS, in natural hiſtory, the ſame with lime-ſtone. See LIME.

CALCEDON, among jewellers, a flaw or foul vein, like chalcedony, found in ſome precious ſtones.

CALCEDONY, or **CHALCEDONY**, in the hiſtory of precious ſtones. See CHALCEDONY.

CALCINATION, in chemiſtry, the ſeparating, by means of heat, or fire, the more fixed from the volatile parts of any compound body.

Calcination has, by ſome, been very improperly called chemical pulverization, as if the whole intention conſiſted in reducing bodies to powder by means of heat: but this is a great miſtake; for though the deſtruction or diminution of the tenacity is often the conſequence, and ſometimes, perhaps, the intentional end of calcination; yet it is in many caſes otherwiſe, ſince lapis calaminaris and other bodies, after they have ſuffered what is every where called calcination, are yet very far from the condition of the powder; and if the making bodies fit, by means of fire, to undergo pulverization, alone conſtituted calcination; then that kind of exſiccation which is employed on rhubarb, and called torrifying, would of courſe come within the meaning of the term, contrary to the univerſal uſe of the word.

There are ſeveral ſpecies of calcination which differs in regard to the effect with which the fire is ſuffered to operate on the calcined matter. Calcination may therefore be divided into perfect, or where the utmoſt change, except vitrification, which can be effected by heat, is brought about; and imperfect, where the degree of heat is limited, and only a part of the alteration it is capable of producing is ſuffered.

CALCULATION, the act of computing ſeveral ſums, by adding, ſubtracting, multiplying, or dividing. See the articles ARITHMETIC, ADDITION, NUMERATION, MULTIPLICATION, &c.

CALCULATION, is more particularly uſed to ſignify the computations in aſtronomy and geometry, for making tables of logarithms, ephemerides, finding the time of eclipſes, &c.

CALCULUS, in natural hiſtory, a little ſtone or pebble. See PEBBLE.

CALCULUS, or **CALCULUS HUMANUS**, in medicine, the ſtone in the bladder or kidneys. See STONE.

CALEFACTION, the production of heat in a body from the action of fire, or that impulſe impreſſed by a hot body upon other bodies about it. This word is uſed in pharmacy, by way of diſtinction from coction, which implies boiling; whereas calefaction is only heating a thing.

CALENDAR, *Calendarium*, a diſtribution of time, accommodated to the various uſes of life, in which ſenſe it differs nothing from the modern almanacs. See ALMANAC.

The firſt calendar was made by Romulus, who divided the year into ten months only, beginning on the firſt day of March, and containing three hundred and four days, in which time he imagined the ſun performed his courſe through all the ſeaſons.

This calendar was reformed by Numa Pompilius, who added two months more, viz. January and February, placing them before March. His year began on the firſt of January, and conſiſted of three hundred and ſixty-five days. This was afterwards improved by Julius Cæſar, and was by him called the Julian account, which reduced the year to three hundred and ſixty-five days, ſix hours; and was retained in moſt proteſtant countries, and in our nation till the year 1752. This year is diſpoſed in quadriennial periods, whereof the three firſt years, which were called common, conſiſted of three hundred and ſixty-five days, and the fourth, biſſextile, of three hundred and ſixty-ſix. See BISSEXTILE.

The Julian account was afterwards corrected by pope Gregory XIII. which on that account obtained the name of the Gregorian calendar, or new-ſtyle, the Julian being called the old-ſtyle: and though the Gregorian calendar be preferable to the Julian, yet it is not without its defects: perhaps, as Tycho Brahe and Caſſini imagine, it is impoſſible ever to bring the year to a perfect juſtneſs.

Julian Chriſtian **CALENDAR**, that wherein the days of the week are determined by the letters A, B, C, D, E, F, G, by means of the ſolar cycle, and the new and full moons, eſpecially the Paſchal full moon, which is the feaſt of Eaſter, and the other moveable feaſts depending thereon, by means of golden numbers rightly diſpoſed through the Julian year. See GOLDEN NUMBER.

Gregorian **CALENDAR**, that which, by means of epacts rightly diſpoſed through the ſeveral months, determines the new and full moons, and the time of Eaſter, with the moveable feaſts depending thereon, in the Gregorian year. See EPACT.

Reformed, or corrected **CALENDAR**, that which ſetting aſide golden numbers, epacts, and dominical letters, determines the equinox, with the Paſchal full moon, and the moveable feaſts depending thereon, by aſtronomical computations, according to the Rudolphine tables. This calendar was introduced among the proteſtant ſtates of Germany in the year 1700, when eleven days were at once, thrown out of the month of February, by which means the corrected ſtyle agrees with the Gregorian.

CALENDER, a machine uſed in manufactories, to preſs certain woollen and ſilken ſtuffs, and linens, to make them ſmooth, and gloſſy, or to give them waves, and water them, as may be ſeen in mohairs and tabbies. This inſtrument is compoſed of two thick cylinders, or rollers, of very hard poliſhed wood, round which the ſtuffs, to be calendered, are wound: theſe rollers, are placed croſſwiſe, between two very thick boards, the lower ſerving as a fixed baſe, and the upper moveable, by means of a thick ſcrew, with a rope faſtened to a ſpindle, and makes its axis: the uppermoſt board is loaded with large ſtones cemented together, weighing twenty thouſand pounds, or more. It is this weight that gives the poliſh, and makes the wave on the ſtuffs about the roller, by means of a ſhallow indenture or engraving cut in it.

CALENDS, *Calendæ*, in Roman antiquity, the firſt day of each month, ſo called from the Greek; it being cuſtomary on thoſe days to proclaim the number of holy-days in each month.

The Roman method of reckoning the days of their months has ſomething extremely ſingular in it; inſtead of computing forwards, in the natural order of the numbers 1, 2, 3, &c. they reckoned backwards.

Hence to find the day of our month, anſwering to that of the calends, to the number of days in the preceding month add two, and from this ſum ſubtracting the number of calends given, the remainder will be the day of our month: thus the fourth of the calends of June is found to anſwer to the twenty-ninth of May; and ſo in other caſes.

CALENDULA, mary-gold, in botany, a genus of plants, which is annual, and common in gardens, propagates itſelf by ſeeds, and flowery from May to the end of autumn.

Marigold flowers have been recommended as aperients to uterine obſtructions and icteric diſorders; as ſudorifics, alexipharmics, and for promoting eruption in malignant and exanthematous fevers.

The leaves of the plant appear to be of greater virtue than the flowers. Their expreſſed juice, which contains great part of the pungent matter of the herb, has been given in doſes of two or three ounces or more, as an aperient; and is ſaid to looſen the belly, and promote the natural ſecretions in general. See MARYGOLD.

CALENTURE, *Calentura*, in medicine, a feveriſh diſorder incident to ſailors in hot climates; the principal ſymptom of which is, their imagining the ſea to be green-fields: hence, attempting to walk abroad in theſe imaginary places of delight, they are frequently loſt.

Vomiting, bleeding, a ſpare diet, and the neutral ſalts, are recommended in this diſorder; a ſingle vomit commonly removing the delirium, and the cooling medicines completing the cure.

CALF, *Vitulus*, in zoology, the young of the ox kind.

Among ſportſmen, the term calf is uſed for a hart or hind of the firſt year. The ſame term is uſed for the young of the whale.

There are two ways of breeding calves, one, when they are allowed to ſuck their dams all the year round, chiefly uſed in countries where paſture is cheap; and the other, when being taken from their dams after ſucking a fortnight, they are taught to drink milk, or milk and water, out of a tub. The former, however, of theſe methods is allowed to make the beſt cattle.

CALIBER, or CALIPER, properly denotes the diameter of any body: thus we ſay, two columns of the ſame caliber, the caliber of a bore of a gun, the caliber of a bullet, &c.

CALIBER-COMPASSES, an inſtrument, made either of wood, iron, ſteel, or braſs: that uſed for meaſuring bullets conſiſts of two branches, bending inwards, with a tongue fixed to one of them, and the other graduated in ſuch a manner, that if the bullet be compreſſed by the ends of the two branches, and the tongue be applied to the graduated branch, it will ſhew the weight of the bullet.

CALIBER, is alſo an inſtrument uſed by carpenters, joiners, and bricklayers, to ſee whether their work be well ſquared.

CALIPH, the ſupreme eccleſiaſtical dignity among the Saracens; or, as it is otherwiſe defined, a ſovereign dignity among the Mahometans, veſted with abſolute authority in all matters relating both to religion and policy.

The Saracen princes aſſumed this title as deſcendants from Mahomet; the caliphs bearing the ſame relation to Mahomet, that the popes pretend they do to Jeſus Chriſt, or St. Peter. It is at this day one of the grand Seignor's titles, as ſucceſſor of Mahomet; and of the ſophi of Perſia, as ſucceſſor of Ali.

CALIXTINS, a name given to thoſe, among the Lutherans, who follow the ſentiments of George Calixtus, a celebrated divine, who oppoſed the opinion of St. Auguſtine, on predeſtination, grace, and free-will.

CALICO, or CALLICO, a kind of manufacture, made of cotton, chiefly in the Eaſt Indies. There is a great trade in the province of Bengal, in this commodity, which is tranſported in prodigious quantities into Perſia, Turkey, Arabia, Muſcovy, and all over Europe. Some of them are painted with flowers of various colours; and the women in the Indies make veils and ſcarfs of them, and, of ſome, coverlets for beds, and handkerchiefs. They make another ſort of this manufacture, which they never dye, and hath a ſtripe of gold and ſilver quite through the piece, and at each end, from the breadth of one inch to twelve or fifteen, they fix a tiſſue of gold, ſilver, and ſilk, intermixed with flowers; both ſides alike. Brampour, Seconge, and Barocke are the places moſt famous for the cotton manufacture.

CALICO-*Printing*, the art of ſtaining callicoes, of various colours. See LINEN *Printing*.

CALLING *the Houſe*, in the Britiſh parliament, is the calling over all the members names, every one anſwering to his own, and going out of the houſe, in the order in which he is called; this they do in order to diſcover whether there be any perſons there not returned by the clerk of the crown; or if any member be abſent without leave of the houſe.

* CALLIRHOE, in fabulous hiſtory, the daughter of the river Achelous, and wife of Alcmeon who killed his mother Fryphile. She married him when he had another wife living, to whom he had given a famous gold neck-lace. Callirhoe having heard of this, declared ſhe would not lie any more with him, if he did not make her a preſent of it. Upon which, Alcmeon going to Phegeus, his other wife's father, and telling him that the oracle had declared, that he would never be cured of his frenzy, if he did not offer the neck-lace in the temple at Delphi, Phegeus gave it him; but being ſoon after informed that it was deſigned for Callirhoe, he commanded his two ſons to murder Alcmeon, which they did accordingly. Jupiter enjoying Callirhoe, ſhe, in order to revenge her huſband, begged that her children by Alcmeon, who were ſtill very young, might become in a moment full grown men. Her petition was granted; and immediately her two ſons, at her deſire, ſet out, and meeting on the road the two murderers, who were going to offer the neck-lace at Delphi, killed them, and afterwards going to Phegeus, killed him and his ſpouſe. Callirhoe after this, dedicated the neck-lace to Apollo.

* CALISTA, in fabulous hiſtory, the daughter of Lycaon, king of Arcadia, and one of the nymphs of Diana, who, being beloved by Jupiter, that god aſſumed the form of the goddeſs of Chaſtity, by which means he debauched her; but her diſgrace being revealed, as ſhe was bathing with her patroneſs, the incenſed deity not only diſgraced her, but turned her and the ſon, with which ſhe was pregnant, into bears, when Jupiter, in compaſſion to her ſufferings, took them up into the heavens, and made them the conſtellations Urſa Major and Urſa Minor.

* CALLIOPE, in the pagan mythology, the muſe preſiding over eloquence and heroic poetry. She was thus called from the ſweetneſs of her voice, and was reckoned the firſt of the nine ſiſters.

This goddeſs was repreſented by the ancients as a beautiful young virgin, crowned with flowers, and holding in her hand the Odyſſey, the Iliad, and the Æneid.

CALLOUS, *Calloſus*, ſomething partaking the nature of a callus.

CALLOSUM CORPUS, in anatomy, a whitiſh hard ſubſtance, joining the two hemiſpheres of the brain, and appears in view when the two hemiſpheres are drawn back. See BRAIN.

CALLUS, or CALLOSITY, in a general ſenſe, any cutaneous, corneous, or oſſeous hardneſs, whether natural or preternatural: but moſt frequently it means the callus generated about the edges of a fracture, provided by nature to preſerve the fractured bones, or divided parts, in the ſituation in which they are replaced by the ſurgeon.

A callus, in this laſt ſenſe, is a ſort of jelly, or liquid viſcous matter, that ſweats out from the ſmall arteries and bony fibres of the divided parts, and fills up the chinks, or cavities, between them. It firſt appears of a cartilaginous ſubſtance, but at length becomes quite bony, and joins the fractured part ſo firmly together, that the limb will often make greater reſiſtance to any external violence with this part, than with thoſe which were never broken.

CALLUS is alſo a hard, denſe, inſenſible knob, riſing on the hands, feet, &c. by much friction and preſſure againſt hard bodies.

CALOMEL, in the materia medica, a name given to mercurius dulcis, ſublimated ſix times.

It is a gentle purgative, and a very noble attenuant. It is the greateſt of all medicines againſt worms, and is now the general remedy in a gonorrhœa. The common method of giving it is in a bolus, over night, ten or twelve grains for a doſe, and a purging draught the next morning, &c. Rubbed with an equal quantity of ſulphur antimonii auratum, it is recommended as a powerful and ſafe alterative.

CALQUING, or CALKING, a term uſed in painting, &c. where the backſide of any thing is covered with a black or red colour, and the ſtrokes or lines traced through, on a waxed plate, wall, or other matter, by paſſing lightly over each ſtroke of the deſign with a point, which leaves an impreſſion of the colour on the plate or wall.

CALTHA, marſh-marygold, in botany, a genus of plants.

CALTROP, in military affairs, an inſtrument with four iron points, diſpoſed in a triangular form, ſo that three of them are always on the ground, and the fourth in the air. They are ſcattered over the ground where the enemy's cavalry is to paſs, in order to embarraſs them.

CALTROP, in botany, the Engliſh name of the tribulus. See TRIBULUS.

CALVARIA, in anatomy, the hairy ſcalp or upper part of the head, which, either by diſeaſe, or old age, grows bald firſt. See HEAD and CALVITIES.

CALVINISTS, thoſe who follow the opinions of John Calvin, one of the principal reformers of the church in the ſixteenth century; he was a perſon of great parts and induſtry, and of conſiderable learning; whoſe doctrine ſtill ſubſiſts in its greateſt purity at Geneva, where it was firſt broached, and from whence it was propagated. He died at Geneva, May 27, 1554; aged forty-five. This is the prevailing religion of the United Provinces. In England it is confined among the diſſenters; and in Scotland, it ſubſiſts in its utmoſt rigour.

The Calviniſts are great advocates for the abſoluteneſs of God's decrees; and hold that election and reprobation depend on the mere will of God, without any regard to the merit or demerit of mankind; that he affords to the elect an irreſiſtible grace, a faith that cannot loſe, which takes away the freedom of will, and neceſſitates all their actions to virtue. The Calviniſts believe that God fore-knew a determinate number, whom he pitched upon to be perſons, in whom he would manifeſt his glory; and that having thus fore-known them, he predeſtinated them to be holy, in order to which he gives them an irreſiſtible grace, which makes it impoſſible for them to be otherwiſe. Strange doctrine!

CALVITIES, or CALVITIUM, in medicine, baldneſs, or a want of hair, particularly on the ſinciput, occaſioned by the moiſture of the head, which ſhould feed it, being dried up, by ſome diſeaſe, old age, or the immoderate uſe of powder, &c. See ALOPECIA.

CALUMET, a ſymbol of peace among the Indians in the north of America. It is made of a red ſtone, like our marble; the head reſembles our tobacco-pipes, but larger; and is fixed on a hollow reed, to hold it for ſmoaking: they adorn it with fine wings of ſeveral colours, and is the calumet of the ſun, to whom they preſent it, eſpecially if they want fair weather, or rain. This pipe is a paſs and ſafe-conduct amongſt all the allies of the nation who has it given, in all embaſſies the ambaſſador carries it as an emblem of peace, and it always meet with a profound regard; for the ſavages are generally perſuaded, that a great misfortune would befal them, if they violated the public faith of the calumet.

CALX, properly ſignifies lime, but is alſo uſed by chemiſts and phyſicians for a fine powder remaining after the calcination or corroſion of metals, and other mineral ſubſtances. See CALCINATION and LIME.

* CALYPSO, in fabulous hiſtory, a goddeſs, who was the daughter of Oceanus and Tethys, or, as ſome ſay, of Atlas. She was queen of the iſland of Ogygia, which from her was called the iſland of Calypſo. According to Homer, Ulyſſes ſuffered ſhipwreck on her coaſt, and ſtaid with her ſeveral years.

CALYX, among botaniſts, a general term expreſſing the cup of a flower, or that part of a plant which ſurrounds and ſupports the other parts of the flower.

The cups of flowers are very various in their ſtructure, and on that account diſtinguiſhed by ſeveral names, as perianthium, involucrum, ſpatha, gluma, &c. See PERIANTHIUM.

CAMÆA, in natural hiſtory, a genus of the ſemipellucid gems. One ſpecies of the camæa is the dull looking onyx, with broad black and white zones; and is the camæa of the moderns, and the Arabian onyx: this ſpecies is found in Egypt, Arabia, Perſia, and the Eaſt-Indies. Another ſpecies of the camæa is the dull, broad-zoned, green and white camæa, or the jaſpi-cameo of the Italians: it is found in the Eaſt-Indies, and in ſome parts of America. The third is the hard camæa, with broad white and cheſnut-coloured veins; and the fourth the hard camæa, with bluiſh, white, and fleſh-coloured broad veins, being the ſardonyx of Pliny's time, only brought from the Eaſt-Indies.

CAMAIEU is alſo a term in painting, when there is only one colour, the lights and ſhades being of gold, or on a golden and azure ground. It is chiefly uſed to repreſent baſſo relievos.

CAMALDULIANS, a religious order founded by St. Romauld, in a little plain on the Mount Apennine, called Camaldali, ſituated in the ſtate of Florence. The manner of life firſt enjoined this order, was, that they dwelt in ſeparate cells, and met together at the time of prayer, ſome of them, during the two lents of the year, obſerved an inviolable ſilence; and others, for the ſpace of an hundred days. On Sundays and Thurſdays they fed on herbs, and the reſt of the week only on bread and water. Theſe conſtitutions were, however, a little moderated ſometime afterwards. This hermitage is now accounted very rich.

CAMBLET, or CAMLET, a plain ſtuff, compoſed of a warp and woof manufactured on a loom, with two treddles, as linens are. There are camblets of ſeveral ſorts, ſome of goats hair, both in the warp and woof; others in which the warp is of hair, and the woof half hair and half ſilk; others again, in which both the warp and the woof are of wool; and laſtly, ſome, of which the warp is of wool and the woof of thread. Some are dyed in the thread, others are dyed in the piece, others are marked and mixed; ſome are ſtriped, ſome waved or watered, and ſome figured. Camblets are proper for ſeveral uſes according to their different kinds and qualities; ſome ſerve to make garments both for men and women; ſome for bed curtains; others for houſhold furniture, &c.

* CAMBRIDGE, the capital of the county of Cambridge, ſituated on the river Cam, 52 miles north-eaſt of London, and 80 eaſt-north-eaſt of Oxford. It is moſt conſiderable for its Univerſity, which is very ancient, founded probably during the heptarchy, ſoon after chriſtianity became the religion of this part of the iſland. There are at preſent in Cambridge, 16 colleges, 14 pariſhes, about 1500 ſtudents of all ſorts, and about 6000 inhabitants in the town. The town and univerſity each ſend two members to parliament. The duke of Grafton is the preſent chancellor of the univerſity.

CAMEL, *Camelus*, in zoology, a genus of quadrupeds, of the order of the pecora; diſtinguiſhed from the reſt by having no horns. This genus comprehends the camel, properly ſo called, with two bunches on its back; the dromedary, or camel, with a ſingle bunch; the glava, or Peruvian camel, with a gibboſe breaſt and even back; and the pacos, or camel, with no gibboſity at all.

The camel is larger than the dromedary, and covered with a fine fur, ſhorter as well as ſofter than that of the ox kind; about the bunches there grow hairs nearly a foot long. It is a native of Aſia, particularly of Bactria, and makes an excellent beaſt of burden.

CAMELEON, in zoology. See CHAMÆLEON.

CAMELOPARDELIS, in zoology, a creature of the deer kind. See ZURNAPA.

CAMERA OBSCURA, in optics, a machine for exhibiting the picture of a landſcape, &c. in its natural colours. The camera obſcura, or darkened chamber, is made after two different methods; one is the camera obſcura, or darkened chamber at large; that is, any large room or chamber made as dark as poſſible, ſo as to exclude the light in every part except a ſmall circular hole in the window ſhutter, where a lens fixed in a ball is placed. The other camera obſcura is ſmall; and thence often called a portable camera obſcura, from its being carried from place to place, for taking a perſpective view of any propoſed place or part of the country.

CAMERATED, among builders, the ſame with vaulted or arched.

CAMERONIANS, a party of preſbyterians, who ſprung up in Scotland, in the reign of Charles II. They affirmed that the king had forfeited his right to the crown, by breaking the ſolemn league and covenant, which were the terms on which he received it. They pretended both to dethrone and excommunicate him; and broke out into an open rebellion. Upon the Revolution, they were reconciled to the kirk, and their preachers ſubmitted to the general aſſembly of the church of Scotland, in 1690.

CAMISADE, in the art of war, an attack of ſurprize in the night, or at the break of day, when the enemy is ſuppoſed to be a-bed.

CAMLET. See CAMBLET.

CAMOLILE. See the aritcle CHAMÆMELUL.

CAMP, the ground upon which an army pitch their tents. It is marked out by the quarter-maſter-general, who appoints every regiment their ground.

The chief advantages to be obſerved in chooſing a camp for an army, are to have it near the water, in a country of forage, where the ſoldiers may find wood for dreſſing their victuals; that it have a free communication with garriſons, and with a country from whence it may be ſupplied with proviſions; and, if poſſible, that it be ſituated on a riſing ground in a dry gravelly ſoil. Beſides, the advantages of the ground ought to be conſidered, as marſhes, wood, rivers, and incloſures; and if the camp be near the enemy, with no river or marſh to cover it, the army ought to be intrenched. An army always encamps fronting the enemy; and generally in two lines, running parallel about five hundred yards diſtance, the horſe and dragoons on the wings, and the foot in the center; ſometimes a body of two, three, or four brigades is encamped behind the two lines, and is called the body of reſerve. The artillery and bread waggons are generally encamped in the rear of the two lines. A battalion of foot is allowed eighty or an hundred paces for its camp; and thirty or forty for an interval betwixt one battalion and another. A ſquadron of horſe is allowed thirty for its camp and thirty for an interval, and more if the ground will allow it.

Flying CAMP, the ground on which a flying army is encamped.

CAMPAIGN, in the art of war, the ſpace of time that an army keeps the field, or is encamped. Concerning the healthineſs of the different ſeaſons of a campaign, Dr. Pringle has the following obſervations: the firſt fortnight or three weeks is always ſickly, after which the ſickneſs decreaſes, and the men enjoy a tolerable ſtate of health throughout the ſummer, unleſs they get wet cloaths. The moſt ſickly part of the campaign is towards the end of Auguſt, while the days are ſtill hot, but the nights cold and damp, with fogs, and dews; then, if not ſooner, the dyſentery prevails; and though its violence is over by the beginning of October, yet the remitting fever gaining ground, continues throughout the reſt of the campaign, and never entirely ceaſes, even in winter quarters, till the froſts begin. He likewiſe obſerves, that the laſt fortnight of a campaign, if protracted till the beginning of November, is attended with more ſickneſs than the two firſt months of the encampment; ſo that it is better to take the field a fortnight ſooner, in order to return into winter-quarters ſo much the earlier. As to winter expeditions, though ſevere in appearance, he tells us, they are attended with little ſickneſs if the men have ſtrong ſhoes, warm quarters, fuel, and proviſions enough.

CAMPANIFORM, or CAMPANULATED, an apellation given to flowers reſembling a bell.

Of campaniform flowers, we meet with four varieties. 1. The bell-flower, properly ſo called. 2. The oblong or tubular bell-flower. 3. The bell-flower expanded to a great width at the mouth, and conſequently reſembling a baſon. 4. The globular, or roundiſh bell-flower; the mouth of which is narrower than its belly.

CAMPANULA, bell-flower, in botany, a genus of plants, the flower of which conſiſts of a companulated ſingle petal.

CAMPEACHY WOOD, *Campecia*, in botany, the ſame with the hæmatoxylum of Linnæus, otherwiſe called log-wood. It is brought to us in large and thick blocks or logs, and is the heart only of the tree which produces it. It is very heavy, and remarkably hard. It is not eaſily cut, but it ſplits pretty readily in a longitudinal direction. Campeachy wood muſt be choſen in large and thick pieces, ſound, and of a deep red colour. It has been long known among the dyers; but it is only of late that it has been introduced into medicine. It is found to be an excellent aſtringent, and is given in form of an extract, in diarrhœas, with very great ſucceſs.

CAMPHOR, in the materia medica, a body of a particular nature, being a mixed ſubſtance, dry, white, tranſparent and brittle, and of a very penetrating ſmell.

There are many Indian plants from which camphors are obtainable, but only two which afford any large quantity, and from which this commodity is commonly prepared, one growing in Sumatra and Borneo, and the other in Japan, as particularly about Satſuma. The camphor of the Japan ſpecies is the only ſort kept in the ſhops, the other being never brought into Europe. This tree is about the ſize of a large lime. All the parts of it are impregnated with camphor, but the roots contain moſt; hence the roots are chiefly made uſe of for the preparation of this commodity; though in want of ſufficient quantities of theſe, the wood and leaves are mixed.

The rough camphor, as extracted by diſtillation, looks much like the grey, ſmall-cryſtalled Eaſt-Indian ſalt-petre, or like common bay-ſalt: in this ſtate, it is imported in canniſters into Europe, particularly into Holland, and there purified or refined.

The refining of camphor was formerly one of the manufactures of Venice, the Venetians being then the only people in Europe who traded directly to the Eaſt-Indies; but that trade has long ago paſſed into other hands; the Venetians now import little or no camphor, and the art of refining it is known only to the Dutch. The Engliſh and French import ſome rough camphor, but ſend it to Amſterdam to be refined, having never been able to ſucceed in the proceſs themſelves. Pure camphor is a dry, colourleſs, tranſparent maſs, in appearance reſembling a ſalt, ſo light as to ſwim on water, moderately compact, yet eaſy to break, though not reducible by itſelf into fine powder, ſoft, and as it were ſaponaceous to the touch: when rubbed betwixt the fingers, of a ſtrong penetrating ſmell, and an acrid aromatic taſte, very eaſily inflammable, and ſo volatile as to exhale totally in a warm air. The only method of preſerving camphor is, to keep it in a cool place ſecured from the air: if tied in papers or bladders, then put into leaden or tin canniſters, or glaſs or earthen veſſels, and ſet in a cool cellar, we need not be afraid of loſing a ſingle grain in many years. Camphor, conſidered as a medicine, is a very warm diaphoretic and antiſeptic: it does not however heat the conſtitution ſo much as might be expected from its hot pungent taſte. Camphor is employed likewiſe in fire-works, and in ſundry other arts, particularly for varniſhes. Camphorated varniſhes excellently preſerve both animal and vegetable bodies, and peculiarly reſiſt worms and other inſects. Camphor, in ſubſtance, alſo laid among clothes, preſerves them from moths.

The principal preparations of camphor are, camphorated ſpirit of wine, and an oil of camphor. The camphorated ſpirit is no other than a ſolution of camphor in rectified ſpirit.

There are ſundry oils of camphor prepared by diſtillation. One is made by diſtilling camphor from red bole or other loamy earths, and repeating the diſtillation from a freſh parcel of the earth, till the whole of the camphor is changed into an oil.

Another oil of camphor is prepared by digeſting one part of camphor with four parts of oil of turpentine, and then diſtilling them. A third oil of camphor is made from camphor and Venice ſoap, by diſtillation and cohobation; this is called by ſome *oleum camphoræ arthriticum*. All the three have ſomewhat of an empyreumatic odour; and, conſidered as medicines, are of little or no conſequence. Camphor is one of thoſe drugs which art cannot improve, either for medicinal or mechanic uſes, and which are therefore to be given in their entire ſubſtance, or unchanged in their compoſition. All the aſſiſtance that the phyſician can in this caſe expect from the chemiſt, is, to diſcover the moſt commodious means of fitting the ſubject for exhibition. For reducing camphor into powder, and thus fitting it for ſuch forms as receive powdery ingredients, it ſhould be moiſtened with a few drops of rectified ſpirit of wine, which will render it eaſily pulverable. The beſt way of obtaining a watery ſolution of camphor is to grind it with almonds, in the proportion of about four ſcruples of almonds to half a dram of camphor: by this means the whole of the camphor will be rendered ſoluble in water into the form of an emulſion. By agitating and grinding it with the yolk of an egg, or mucilage, it becomes likewiſe miſcible with water; the yolk of one egg is ſufficient for about two ſcruples of camphor. *Neumann's Chemiſtry*.

Camphor has various uſes in fire-works, varniſhes, and medicine. In the laſt it is at preſent in high repute, eſpecially in all inflammatory, putrid, peſtilential, and maniacal diſeaſes. It is alſo given with advantage at the cloſe of the venereal diſtemper, mixed with the balſams, or fine turpentines.

CAMPION, in botany, a name ſometimes given to the lychnis. See the article LYCHNIS.

* **CANADA**, or the province of Quebec, an extenſive country in North America,

ſica, bounded on the north-eaſt by the gulph of St. Lawrence and St. John's river; on the ſouth-weſt by lands inhabited by the Indians; on the ſouth by the provinces of Nova Scotia, New England, and New York; and on the north-weſt by lands claimed by the Indians; extending about five hundred miles in length and two hundred miles in breadth. The French, under the name of Canada, comprehended a much larger territory, taking into their claim great part of the New England provinces, and of thoſe of Nova Scotia and New York, and extending it northward to Hudſon's bay; to the weſt as far as the pacific ocean; and to the ſouthward to the gulph of Mexico. The climate is cold, and the winters long and very ſevere, eſpecially in the north parts of the province. The rivers are ſoon frozen up, and the ice is frequently ſix feet thick. Yet the ſoil is in general very good, and in many parts both pleaſant and fertile, producing moſt kinds of Engliſh grain and vegetables in abundance, and there are vaſt foreſts of tall trees, as oaks, pines, cedars of ſeveral kinds, wild vines, and animals peculiar to North America, particularly the beaver. The ſummers of Canada are exceeding pleaſant, and we are told, have ſo happy an effect upon the ſoil, that the farmer uſually reaps his corn in ſixteen weeks from the time of ſowing the ſeed. The meadow grounds, which are well watered, yield excellent graſs, and breed vaſt quantities of large and ſmall cattle. It affords very fine timber, and the mountains abound with coals. It is remarkable for its rivers, the principal of which is that of St. Lawrence, and for its lakes, which are of a prodigious ſize. Great Britain conquered this country from France in the laſt war, and was ſecured in the poſſeſſion of it by the late treaty of peace, by which the popiſh inhabitants are juſtly allowed liberty of conſcience and a popiſh biſhop. The principal towns of Canada are Quebec, Montreal, Les Trois Riveres, and Taduſack.

CANAL, *Canalis*, in hydrography, a ſort of artificial river, made for the convenience of water-carriage.

Several of the kings of Egypt endeavoured to join the Red-ſea to the Mediterranean, by a canal opened from the Red-ſea to one of the arms of the Nile, which diſcharges itſelf into the Mediterranean; and the Turkiſh emperor Solyman II. employed one hundred and fifty thouſand men upon this buſineſs to no purpoſe.

There are ſeveral large canals in France; particularly that of Briere, begun under Henry IV. and finiſhed under Lewis XIII. and that of Languedoc, propoſed under Francis I. but not finiſhed till the time of Lewis XIV.

CANAL, in anatomy, a duct or paſſage through which any of the juices flow: as 1. The ſemi-circular canals, diſtinguiſhed by the epithets of the largeſt, the middle one, and the leaſt, in the labyrinth of the ear, opening by five orifices into the veſtibule. 2. The canals of the auditory nerve. 3. The canalis arterioſus. 4. The naſcal canal. 5. The canalis ſemilunaris. And 6. The canalis venoſus. See FOETUS, NOSE, &c.

CANARY-BIRD, *Paſſer Canarienſis*, the Engliſh name of the whitiſh fringilla, with the wings and tail greeniſh.

Canary birds are natives of the Canary Iſlands, whence they have their name; but the melody of their voice is ſo ſweet, that there are but few nations in Europe which do not keep them in cages, where they very readily breed.

CANCER, the crab, in zoology, one of the diviſions of ſquillæ, comprehending all thoſe with ſhort tails. See SQUILLA.

Crabs are a well-known ſhell-fiſh, of which there are a great many ſpecies; as the common large crab, the ſpider-crab, the Molucca-crab or king-crab, the little woolly-crab, the prickly long-armed-crab, &c.

CANCER, in ſurgery, a roundiſh unequal hard livid tumour, generally ſeated in the glandulous parts of the body, and at length appearing with turgid veins, ſhooting out from it ſo as to reſemble, as it is thought, the figure of the crab-fiſh, or, as others ſay, becauſe like that fiſh, when once it has got hold, it is ſcarce poſſible to drive it away.

Cancerous, or ſchirrous tumours, often appear ſpontaneouſly without any evident cauſe, and ſeem peculiar to certain conſtitutions; others, they may be accidental, or proceed from ſharp corroſive or other coagulating juices in the body, errors in the non-naturals, a ſtoppage of the neceſſary evacuations, contuſions, ſtagnation, or coagulation of the milk in the breaſt, &c. The immediate cauſe of a cancer ſeems to be a too corroſive volatile ſalt, approaching to the nature of arſenic, formed by the ſtagnation of humours, &c. Stolterforth obſerves, that it has been frequently cured by mercury and ſalivation. Some take an ulcerous cancer to be nothing

thing elſe but an infinite number of little worms, which devour the fleſh by degrees. The cancer is allowed to be the moſt terrible evil that befalls the body; it is uſually cured while yet a ſmall tumour of the bigneſs of a nut, or at moſt a ſmall egg, by extirpation; when it ſeizes the breaſt, or it burſts into an ulcer, amputation takes place. It begins without any pain, and appears at firſt like a chicory pea, but grows apace, and becomes very painful. The cancer ariſes principally on the lax and glandulous parts, as the breaſts and emunctories: it is the moſt frequent in women, eſpecially ſuch, ſays Stolterforth, as are barren, or live in celibacy. The reaſon of its appearing in the breaſt, more than other parts, is, they being full of glands, with lymphatics and blood veſſels among them, the ſmalleſt contuſion, compreſſion, or punction, extravaſates thoſe liquors, which grow by degrees acrimonious from the cancers. Hence the maſters of the art ſay, that a cancer is that in the glands, which a caries is in the bones, and a gangrene in the fleſhy part.

The cancer is, however, found in other ſoft ſpungy parts of the body; and there have been ſome found in the gums, belly, neck of the matrix, ureters, lips, noſe, cheeks, abdomen, thighs, and even the ſhoulders, as Stolterforth proves. A cancer ariſing on the leg is called a lupus, or on the face or noſe, a noli me tangere. Cancers are divided, according to the ſeveral ſtages, into occult and open, or ulcerated: occult cancers are thoſe not arrived at their ſtate, nor yet burſt; ulcerated cancers are known by their roughneſs and fulneſs of holes, through which oozes a filthy ſtinking glutinous matter, frequently yellowiſh; by their pungent pain, which reſembles the pricking of pins; by their blackneſs, the ſwelling of the lips of the ulcer, and the veins about it, which are blackiſh, tumid, and varicoſe; ſometimes the extremities of the blood-veſſels are gnawed off, and the blood iſſues out; in a cancer of the breaſt the adjacent fleſh is ſometimes ſo conſumed, that one may ſee into the cavity of the thorax; it occaſions a ſlow fever, a loathing, oftentimes faintings, ſometimes a dropſy, and laſtly death. Some cancerous tumours are moveable, others fixed; ſome inflamed, others paliſh, attended with pain, heat, tenſion, and pulſation. In their beginning they are ſometimes no bigger than a pea, but often increaſe gradually to the ſize of a walnut, egg, &c. ſometimes alſo their growth is ſudden, and at others ſlow, ſo as to continue upon the increaſe many years together. When they ulcerate, the ſuppuration is generally partial, the matter they diſcharge ſeeming of an ill-colour, and very fœtid. All cancers are dangerous, and ſeldom give way to the uſe of evacuating medicines, eſpecially when they lie deep, or ſeem owing to a particular conſtitution of the patient. They alſo prove more difficult to cure, according to their ſize, the nature and office of the part they affect, the age of the patient, &c. Some occult cancers, particularly thoſe which happen in the breaſts of women, may remain harmleſs in the body for ſeveral years, and without ulcerating; though, upon any external injury, they may afterwards increaſe, break, and ſoon prove mortal. In this caſe, every thing that ſuddenly riſes the velocity of the blood ſhould be carefully avoided.

The learned Dr. Stork, of Vienna, has publiſhed two pieces on the virtues of cicuta, or hemlock, in cure of cancers, and given many remarkable caſes in which it was attended with ſucceſs. Experiments of the ſame kind have alſo been made in England, ſome of which have ſucceeded, while others have totally failed of ſucceſs: ſo that the virtues of hemlock in curing this terrible diſeaſe are not yet properly eſtabliſhed. See CICUTA.

CANCER, in aſtronomy, one of the twelve ſigns of the zodiac, repreſented on the globe in the form of a crab.

Ptolemy makes it contain thirteen ſtars; Tycho Brahe fifteen; Bayer and Hevelius twenty-nine; and Flamſtead ſeventy-one. It is the fourth ſign, reckoning from aries, and gives name to one of the quadrats of the ecliptic.

Tropic of CANCER, in aſtronomy, a leſſer circle of the ſphere parallel to the equator, and paſſing through the beginning of the ſign cancer.

CANCEROUS, belonging to, or partaking of, the nature of a cancer. See CANCER.

CANDIDATE, one who aſpires to ſome public office.

CANDLE, a ſmall taper of tallow, wax, or ſperma ceti; the wick of which is commonly of ſeveral threads of cotton, ſpun and twiſted together. A tallow-candle, to be good, muſt be half ſheeps, and half bullocks tallow; for hogs tallow makes the candle gutter, and always gives an offenſive ſmell, with a thick black ſmoke. The wick ought to be pure, ſufficiently dry, and properly twiſted, otherwiſe the candle will emit an unconſtant vibratory flame, which is both prejudicial to the eyes, and inſufficient for the diſtinct illumination of objects. There are two ſorts of tallow-candles; the one dipped, the other moulded; the former are the common candles; the latter are the invention of the Sieur le Brege, at Paris.

Sale or Auction by inch of CANDLE, is when a ſmall piece of candle being lighted, the byſtanders are allowed to bid for the merchandize that is ſelling; but the moment the candle is out, the commodity is adjudged to the laſt bidder.

CANDLE-BERRY-TREE, in botany, the Engliſh name of a ſpecies of myrica. From the berries of this tree a green kind of wax is drawn by boiling, whereof they make candles; and hence is derived the candle-berry-tree.

CANDLEMAS, a feaſt of the church held on the ſecond day of February, in honour of the purification of the Virgin Mary. It is borrowed from the ancient Chriſtians, who on that day uſed abundance of lights in their churches and proceſſions, in memory, as is ſuppoſed, of our Saviour's being on that day declared by Simon, "To be a light to lighten the "Gentiles." In imitation of this cuſtom, the Roman Catholics, on this day, conſecrate all the tapers and candles which they uſe in their churches during the whole year. At Rome the Pope performs that ceremony himſelf, and diſtributes wax-candles to the cardinals and others, who carry them in proceſſion through the great hall of the pope's palace. This ceremony was prohibited in England by an order of council in 1548.

CANDLESTICK, a well-known inſtrument to hold a candle.

CANDY, or *Sugar* CANDY, a preparation of ſugar, made by melting and cryſtallizing it ſix or ſeven times over, to render it hard and tranſparent. It is of three kinds, white, yellow, and red. The white comes from the loaf-ſugar, the yellow from the caſſonado, and the red from the muſcovado. See SUGAR.

CANDYING, in pharmacy, the act of preſerving ſimples in ſubſtance, by boiling them in ſugar. The performance of this originally belonged to the apothecaries, but is now become a part of the buſineſs of a confectioner.

CANE, a walking-ſtick; and it is cuſtomary to adorn it with a head of gold, ſilver, agate, &c. Some are without knots, and very ſmooth and even; others are full of knots, about two inches diſtant from each other. The laſt have very little elaſticity, and will not bend ſo well as the others. Canes of Bengal are the moſt beautiful, which the Europeans bring into Europe. Some of them are ſo fine, that people work them into veſſels or bowls, which being varniſhed over in the inſide with black or yellow lacca, will hold liquors as well as glaſs or china ware, and the Indians uſe them for that purpoſe.

CANELLA ALBA, wild cinnamon, in the materia medica, the inner bark of a large bay-leaved tree, growing in the Low lands of Jamaica, and other American iſlands; brought over in the form of quills; of which ſome are large and thick, taken from the trunk of the tree; others ſlender and thinner, from the branches having generally pieces of a wrinkled browniſh coat adhering to the outſide, lined on the inſide with a fine white membrane, breaking over with a cloſe even ſurface, and appearing internally of an unequal, pale, browniſh or yellowiſh white colour.

Canella alba has hitherto been rarely employed in medicine. The London college has now received it in two officinal compoſitions for alleviating the ill flavour of aloes. It is a moderately warm aromatic; of an agreeable ſmell, ſomewhat reſembling that of cloves, but far weaker; and of a pungent taſte, accompanied with a conſiderable bitteriſhneſs.

* CANENS, in fabulous hiſtory, the wife of Picus, king of the Lauretans, whoſe huſband being turned by Circe into a wood-pecker, lamented him till ſhe diſſolved into air.

CANICULA, or CANICULUS, in aſtronomy. See CANIS MINOR.

CANICULAR DAYS, commonly called dog-days, a certain number of days preceding and enſuing the heliacal riſing of canicula, or the dog-ſtar in the morning.

The dog-days begin towards the end of July, and end the beginning of September.

CANINE, what partakes of, or relates to the nature of a dog.

CANINE TEETH, in anatomy, are two ſharp-edged teeth in each jaw: one on each ſide, placed between the inciſores and molares.

CANINE MUSCLES, a pair of muſcles common to both lips. They ariſe from the hollow on each ſide under the os jugalis, in the os maxillare, and are inſerted into the angle of the lips.

CANIS, dog, in zoology, the name of a comprehenſive genus of quadrupeds, of the order of feræ. They are diſtinguiſhed from the other genere of this order, by the number of their teats, or paps, which in the dog kind are ten, four on the breaſt, and ſix on the belly: add to this, that their feet are adapted to running; they have five toes on the fore ones, and four on the hinder.

CANIS MAJOR, in aſtronomy, a conſtellation of the ſouthern hemiſphere, conſiſting of twenty-eight ſtars, according to Ptolemy; of thirteen, according to Tycho Brahe; and thirty-two in the Britannic catalogue.

CANIS MINOR, CANICULUS, or CANICULA, in aſtronomy, a conſtellation of the northern hemiſphere. In Ptolemy's catalogue, the canis minor comprehends two ſtars; in that of Tyco Brahe, five; and in the Britannic catalogue, fifteen.

CANISTER, a large tin-box, in which tea is brought from China. They are of ſeveral ſizes, holding from one pound to ten of that vegetable.

CANKER, a ſpeck made by a ſharp humour, which gnaws the fleſh almoſt like a cauſtic; very common in the mouths of children.

CANKER *in Trees*, a wound or blemiſh in the trunk of the tree, which does not heal up by nature, but will increaſe and damage, if not endanger the whole tree. Theſe wounds are ſometimes occaſioned by accidents, as blows, or by the branches of one tree galling another by the motion they are put into by the winds; if this latter be the caſe, the offending branch muſt be cut off, or drawn another way, or elſe all remedies are vain. The wound muſt be cut and enlarged every way to the quick, and all the decayed wood muſt be taken clean out; the whole internal ſurface of the wound muſt be rubbed over with tar mingled with oil; and after this it muſt be filled up with clay and horſe-dung mixed together, or with horſe-dung alone, which many eſteem beſt of all; in this caſe the dung muſt be bound over with a rag: hogs-dung is by many preferred to horſe-dung for this purpoſe; and it is proper to add to this application the keeping the roots cool and moiſt, by laying fern and nettles about them. The adding a coat of dung, and pond or river mud, about the roots of trees, if they are ſubject to this from their ſtanding in a dry barren land, as is often the caſe, is a very good cure.

CANNA, the fruit of which is a roundiſh, ſcabrous, coronated, triſulcated capſule, with three cells and three valves, containing ſome globoſe ſeeds.

CANNABIS, hemp, in botany. See HEMP.

CANNEQUINS, white cotton-linens brought from the Eaſt-Indies, a very proper commodity for trading on the coaſt Guinea.

CANNEL-COAL, in the materia medica, a ſubſtance, which has a long time been confounded, both by authors and druggiſts, with jet. It is dug up in many parts of England in great abundance, particularly in Lancaſhire, where it is burnt as common fuel. It is worked into toys and utenſils of various kinds, under the name of jet.

CANNON, a military engine for throwing balls, &c. by the help of gunpowder.

The invention of cannon is generally ſuppoſed to have happened in the 14th century.

The matter of which cannons are made is either iron or braſs, or rather a mixture of copper, tin, and braſs. The mixture of tin is deſigned to make the metal more compact and denſe; ſo that the heavier the copper is, the leſs tin it requires. It is uſual to add eight pounds of braſs and ten pounds of tin to one hundred pounds of copper; but ſometimes they uſe ten pounds of tin, ten pounds of lead, and five pounds of braſs.

The parts and proportions of cannon about eleven feet long are: the barrel or cavity nine feet; its fulcrum or ſupport fourteen; and its axis ſeven; the diameter of the bore at the mouth ſix inches two lines; the plug of the ball two lines; the diameter of the ball therefore ſix inches, and its weight thirty-three $\frac{1}{3}$ pounds; the thickneſs of the metal about the mouth two inches, and at the breech ſix; the charge of powder from eighteen to twenty pounds. It will carry point-blank ſix hundred paces, and may be loaded ten times in an hour, and ſometimes fifteen.

Cannons are diſtinguiſhed by the diameters of the balls they carry. The rule for their length, &c. is, that the whole charge of powder be on fire before the ball quit the piece. If it be made too long, the quantity of air to be driven out before the ball, will give too much reſiſtance to the impulſe: and that impulſe ceaſing, the friction of the ball againſt the ſurface of the piece will leſſen its velocity.

The greateſt range of a cannon is ordinarily fixed at 45 deg. but Dr. Halley ſhews it to be at $44\frac{1}{2}$.

Experience ſhews, that two cannons of equal bore, but different lengths, the longer requires a greater charge of powder than the ſhorter. The ordinary charge of cannon is to have the charge of its powder half that of its ball.

CANNULA, in ſurgery, a tube made of different metals, principally of ſilver and lead, but ſometimes of iron. They are introduced into hollow ulcers, in order to facilitate a diſcharge of pus or any other ſubſtance; or into wounds, either accidental or artificial, of the large cavities, as the thorax or abdomen: they are uſed in the operation of bronchotomy, and by ſome, after cutting for the ſtone, as a drain for the urine.

Other cannulus are uſed for introducing cauteries, either actual or potential, in hollow parts, in order to guard the parts adjacent to that to be cauterized from injury. They are of various figures; ſome being oval, ſome round, and others crooked.

CANOE, a kind of boat formed of the trunk of a tree hollowed: and ſometimes compoſed of ſeveral pieces of the bark ſewed together. They are generally rowed with paddles, which are pieces of light wood, nearly reſembling a corn ſhovel; and inſtead of moving the paddle horizontally like an oar, they row perpendicularly: the ſmall ones are very narrow, having only room for one perſon in breadth, and eight or ten lengthwiſe. They very rarely carry ſail, unleſs when going before the wind; and their ſails are made of a ſort of ruſhes or ſilk-graſs; they ſeldom have any rudder, the want of which is ſupplied by a dextrous management of the hind-oars. The negroes in Guinea, and even many in the Eaſt Indies, uſe them. The American Indians, when they are neceſſitated to land on account of a water-fall, or other occaſion, carry their canoes on their heads or ſhoulders, till they arrive at ſome place where they may again be launched. In the repoſitory of the Royal Society is the model of a Greenland canoe, covered with ſeal-ſkins, and reſembling a great bladder; ſo that however the waves daſh over it, the perſon who manages it ſits ſafe.

CANON, in eccleſiaſtical affairs, one who poſſeſſes a revenue allotted for the performance of divine ſervice in a cathedral or collegiate church.

CANON *of Scripture*, a liſt of the inſpired writings; or ſuch books of the Bible as are called canonical, becauſe they are in the number of thoſe books which are looked on as ſacred.

The canon of Scripture may be conſidered either as Jewiſh or Chriſtian with reſpect to the ſacred writings acknowledged as ſuch by the Jews, and thoſe admitted by the Chriſtians.

As for the Chriſtian church, there is no doubt but it acknowledged thoſe books to be canonical, which were cited, as of divine authority, by Chriſt and his apoſtles. As to the canon of the New Teſtament, it is to be obſerved, that the four Evangeliſts, the Acts of the Apoſtles, all the Epiſtles in St. Paul, except that to the Hebrews, and the firſt Epiſtles of St. Peter and St. John, have been received as canonical by the unanimous conſent of all the churches in all times; the Epiſtle of St. James, that of St. Jude, the ſecond Epiſtle of St. Peter, and the ſecond and third Epiſtles of St. John, were not received by all the churches from the beginning, as canonical; but have ſince been acknowledged as genuine, and therefore admitted into the canon. We muſt obſerve, that the canon of the New Teſtament was neither ſettled by any ſynod, or ſingle authority: this collection was formed upon the unanimous conſent of all the churches, who, by conſtant tradition, reaching to the apoſtolical age, had received ſuch a number of them as were written by inſpired authors.

CANON, in monaſtic orders, a book wherein the religious of every convent have a fair tranſcript of the rules of their order, frequently read among them, as their local ſtatutes.

CANON, in muſic, a compoſition of two or more parts, in which one leads, and the other follows: or it is a line of any length, ſhewing, by its diviſion, how muſical intervals are diſtinguiſhed according to the ratios, or proportions, that the ſounds terminating the intervals bear one to another, when conſidered according to their degree of being acute or grave.

CANON, in arithmetic, algebra, &c. a rule to ſolve all things of the ſame nature with the preſent inquiry: thus, every laſt ſtep of an equation in algebra, is ſuch a canon; and if turned into words, is a rule to ſolve all queſtions of the ſame nature with that propoſed.

CANON-LAW, a collection of eccleſiaſtical laws, ſerving as the rule and meaſure of church government. The power of making laws was exerciſed by the church before the Roman empire became Chiſtian. The canon-law that obtained throughout the Weſt, till the twelfth century, was the collection of canons made by Dionyſius Exiguus, in 520, the capitularies of Charlemange, and the decrees of the popes, from Sircius to Anaſtaſus.

The authority veſted in the church of England of making canons, was aſcertained by a ſtatute of Henry VIII. commonly called the act of the clergy's ſubmiſſion; by which they acknowledged that the convocation had been always aſſembled by the king's writ; ſo that though the power of making canons reſided in the clergy, met in convocation, their force was derived from the authority of the king's aſſenting to, and confirming them. The old canons continued in force till the reign of James I. when the clergy being aſſembled in convocation, the king gave them leave to treat and conſult upon canons, which they did, and preſented them to the king, who gave them the royal aſſent: theſe were a collection out of the ſeveral preceding canons and injunctions. Some of theſe canons are now obſolete. In the reign of Charles I. ſeveral canons were paſſed by the clergy in convocation.

CANONESS, in the Romiſh church, a woman who enjoys a prebend, affixed, by the foundation, to maids, without their being obliged to renounce the world, or make any vows.

CANONICAL, belonging to, or partaking of, the nature of a canon. See CANON-LAW. We alſo meet with canonical life, canonical hours, &c. uſed much in the ſame ſenſe.

CANONIST, one ſkilled in, or who makes profeſſion of the canon-law. See CANON-LAW.

CANONIZATION, a ceremony in the Romiſh church, by which perſons deceaſed are ranked in the catalogue of the ſaints. It ſucceeds beatification. Before a beatified perſon is canonized, the qualifications of the candidate are ſtrictly enquired into, in ſome conſiſtories held for that purpoſe; after which one of the conſiſtorial advocates, in the preſence of the pope and cardinals, make the panegyric of the perſon who is to be proclaimed a ſaint, and gives a particular detail of his life and miracles; which done, the holy father decrees his canonization, and appoints the day. On the day of canonization, the pope officiates in white, and their eminences are dreſſed in the ſame colour. St. Peter's church is hung with rich tapeſtry, upon which the arms of the pope, and of the prince or ſtate requiring the canonization, are embroidered in gold and ſilver. An infinite number of lights blaze all round the church, which is crowded with pious ſouls, who wait with a devout impatience, till the new ſaint has made his public entry, as it were, into Paradiſe, that they may offer up their petitions to him, without danger of being rejected. The following maxim, with regard to canonization, is now obſerved, though it has not been followed above a century, viz. not to enter into the enquiries prior to canonization, till fifty years, at leaſt, after the death of the perſon to be canonized.

CANONRY, the benefice filled by a canon.

CANOPY, a magnificent covering, raiſed above an altar, throne, chair of ſtate, pulpit, and the like.

CANTALIVERS, in architecture, pieces of wood framed into the front or other ſides of the houſe, to ſuſpend the mouldings and eaves over it.

Cantalivers ſeem, in effect, to be the ſame with modilions, except that the former are plain, and the latter carved: they are both a kind of cartouches, ſet at equal diſtances under the corona of the cornice of a building.

CANTATA, in muſic, a poetical compoſition, intermixed with recitative, airs, and different movements, chiefly intended for a ſingle voice, with a thorough-baſs, though ſometimes for other inſtruments.

* CANTERBURY, the capital city of the county of Kent. In the time of the Saxon heptarchy it was the capital city of Kent, and the ſeat of its kings. It was greatly ſhattered in the time of the Saxon and Daniſh wars, and ſeveral times almoſt entirely deſtroyed by fire, and yet it was rebuilt with greater beauty than before. It had many privileges granted by ſeveral kings, and Henry VI. ordained its government to be by a mayor, a recorder, twelve

aldermen, a ſheriff, twenty-four common-council-men, a mace and ſword bearer, and four ſerjeants at mace; and it has fourteen pariſh churches, beſides the cathedral; with two markets on Wedneſdays and Saturdays, and a fair on the 29th of Sept. for toys. What added to the wealth and grandeur of the city was Thomas Becket's ſhrine, which was viſited by devout perſons from all parts, not only of England, but of Europe. It was made an archiepiſcopal ſee by pope Gregory I. who removed it from London; and it has ſince received many benefactions from ſeveral of the archbiſhops. The principal church in Canterbury is the cathedral, which is very magnificent. In the times of popery it had thirty-ſeven altars, which are now reduced to one communion table. The font is a curious piece of workmanſhip, and was built by Dr. Warner, biſhop of Rocheſter. The Martyrdom, a place ſo called, is at the foot of the ſtairs that go up out of the nave into the choir. It has its name from the murder of Thomas Becket. Here are ſeveral monuments and burial inſcriptions of kings, queens, and great perſons. Near the cathedral is a church for foreign Proteſtants, which is now uſed by the French refugees. This cathedral has been ſeveral times burnt, ſince it was firſt conſecrated, and the laſt time was in 1174, after which it was not quite finiſhed till the reign of Henry V. The ſhrine of Thomas Becket was very rich in gold and precious ſtones, which Henry VIII. ſeized for his own uſe, at the diſſolution of the monaſteries.

This city is not very large, for it and the ſuburbs are but a mile long, and it is about three in circumference. The houſes are not very extraordinary, and moſt of the ſtreets are narrow. The reſidence of the archbiſhop is not here, but at Lambeth, near London, and at Croydon, in Surry. The city is ſeated in a good air, in a fruitful pleaſant country. It is ſeated on the river Stower, in which there are good trout. With regard to the antiquities of Canterbury, there are many remains of Roman buildings, which ſhew that it was a conſiderable place in the time of the ancient Romans. Canterbury is 27 miles from Rocheſter, and 57 from London.

CANTERBURY-BELL, in botany, the name by which ſome call the campanula, or bell-flower.

CANTHARIDES, in the materia medica, a beautiful kind of winged inſect, of a bright, ſhining, greeniſh golden colour, with ſome admixture of bluiſh. They were formerly brought from Spain; and are therefore ſtill commonly called Spaniſh flies. They are not, however, peculiar to that kingdom. France, ſome parts of Germany, and other countries, produce abundance. It is principally in the ſpring, and on poplar and aſh-trees, that they are met with.

Cantharides, when freſh, applied to the ſkin, raiſe a bliſter on the part. The uſual bliſtering plaſters are compoſed of powdered cantharides and ſome common plaſter, in the proportion of one part of cantharides, to two, ſix, eight, or more of the plaſter, according as the compoſition is required to be more or leſs active.

Taken internally, in the doſe even of a few grains, they generally occaſion violent irritation and inflammations. They act in a peculiar manner upon the kidneys, and the urinary and ſeminal veſſels: when applied only externally as a bliſter to remote parts, they often affect the bladder, and bring on a difficulty and pain in making water. They are nevertheleſs given inwardly in ſmall doſes, both with ſafety and advantage, in ſome refractory diſorders, which baffle the force of medicines of leſs activity. Dr. Græneveld, who was impriſoned in England for having ventured to exhibit them, publiſhed a treatiſe in defence of his practice and of the utility of the medicine. He employs camphor for correcting the virulence of the cantharides; but the beſt remedies againſt the ill effects of this, as of other ſtimulating drugs, are milk and expreſſed oils.

CANTICLES, a canonical book of the Old Teſtament. The Talmudiſts aſcribe it to Hezekiah, but the learned are agreed that Solomon was the author of it; and his name is prefixed to it in the title of the Hebrew text, and of the ancient Greek verſion. It is a kind of epithalamium, in the form of an idyllium or bucolic, in which are introduced, as ſpeakers, a bridegroom, a bride, the friends of the bridegroom, and the companions of the bride. Some authors are of opinion, that Solomon's deſign in this piece, was to deſcribe his amour with Abiſhag the Shunamite, or with the daughter of Pharaoh: on the contrary, others take it to be wholly allegorical, and underſtand it of the ſpiritual love of God towards his church.

CANTO, in muſic, the treble, or at leaſt the higher part of a piece.

CANTONED, in architecture, is when the corner of a building is adorned with a pilaſter, an angular column, ruſtic quoins, or any thing that projects beyond the wall.

CANTONED, or CANTONIZED, *Cantonée*, in heraldry, the poſition of ſuch things as are borne with a croſs, &c. between. He bears gulis, a croſs argent cantoned with four ſcallop-ſhells.

CANTONING, in the military art, the allotting diſtinct and ſeparate quarters to each regiment of an army; the town where they are quartered, being divided into ſo many cantons, as there are regiments.

CANT-TIMBERS, in ſhip-building, thoſe timbers, or ribs of the ſhip which are ſituated afore and abaft, or at the two ends where the ſhip grows narrower below.

CANVAS, a very clear unbleached cloth of hemp, or flax, wove in little ſquares. It is uſed for working tapeſtry with the needle, by paſſing the threads of gold, ſilver, ſilk, or wool, through the intervals or ſquares.

CANVAS, is alſo a coarſe cloth of hemp, unbleached, ſomewhat clear, which ſerves to cover womens ſtays, alſo to ſtiffen mens cloaths, and to make ſome other of their wearing apparel, &c.

CANVAS is alſo a very coarſe cloth made of hemp, unbleached, ſerving to make towels, and anſwering other domeſtic purpoſes. It is alſo uſed to make ſails for ſhipping, &c.

* CANUTE, the firſt Daniſh king of England, invaded this country in 1015, was choſen king by the clergy at Southampton in 1016, began to reign about 1017; made an alliance with Normandy, and married Emma, Ethelred's widow 1018; made a voyage to Denmark, attacked Norway, and took poſſeſſion of the crown 1028; died at Shaftſbury 1036, was buried at Wincheſter, and ſucceeded by his ſecond ſon Harold.

CAP, a part of dreſs made to cover the head.

CAP *of Maintenance*, one of the regalia, or ornaments of ſtate belonging to the kings of England, before whom it was carried at the coronation, and other great ſolemnities. Caps of maintenance are alſo carried before the mayors of the ſeveral cities in England.

CAP *of a Gun*, a piece of lead which is put over the touch-hole of a gun, to keep the priming from being waſted or ſpoiled.

CAPACITY, an aptitude, or diſpoſition to retain or hold any thing.

CAPACITY, in geometry, the ſolid contents of any body; alſo our hollow meaſures for wine, beer, corn, ſalt, &c. are called meaſures of capacity.

CAPACITY, in law, the ability of a man, or body politic, to give or take lands, or other things, or ſue actions.

CAPARISON, or HORSE-CLOTH, a ſort of cover for a horſe. For led horſes, it is generally made of linen cloth, bordered round with woollen, and enriched with the arms of the maſter upon the middle, which covers the croupe, and with two cyphers on the two ſides. The caparaſons for the army, are ſometimes a great bear's ſkin; and thoſe for ſtables, are of ſingle buckram in ſummer, and of cloth in the winter.

CAPE, in law, a judicial writ concerning plea of lands or tenements, and is divided into cape *magnum* and cape *parvum*, both of which affect things immoveable; and beſides theſe, there is a cape *ad valentiam*.

CAPE *Magnum*, or the grand cape, lies before appearance, to ſummon a tenant to anſwer the default, and alſo aver to the demandant.

The CAPE *Parvum*, is after appearance and view granted, and it ſummoneth the tenant to anſwer the default only.

CAPE *ad valenciam* is a ſpecies of cape *magnum*, where once being impleaded, and on a ſummons to warrant lands, a voucher does not come at the day; whereupon, if the demandant recovers of the tenant, he ſhall have this writ againſt the vouchee, and recover ſo much in value of his lands, in caſe he hath ſo much; and if not, there ſhall be an execution of ſuch lands and tenements as ſhall after deſcend to him in fee; or if he purchaſes afterwards, there may be a reſummons, &c. againſt him.

CAPELET, a diſeaſe in horſes, when the tip of the hock is moveable, and more ſwelled than ordinary.

CAPELLA, in aſtronomy, a bright fixed ſtar in the left ſhoulder of the conſtellation auriga. It is, in the Britannic catalogue, the fourteenth in order of that conſtellation: and its longitude is 17° 27′ 31″ of Gemini, its latitude 22° 51′ 47″ N.

CAPER *Capparis*, in botany a genus of plants, the buds of which make a conſiderable article in commerce; they are imported from Italy and France in pickle, and uſed in ſauces, &c.

The caper-bark of the ſhops is not the bark of the branches, but that of the roots of the ſhrub which produces it.

It is an aperient and attenuant, and is recommended in nephritic caſes, and in dropſies, jaundices, and many other chronic diſeaſes: but the preſent practice does not pay any regard to it.

CAPHAR, a duty which the Turks raiſe on the Chriſtians, who carry or ſend merchandizes from Aleppo to Jeruſalem, and other places in Syria.

CAPI-AGA or CAPOU-AGASSI, a Turkiſh officer, who is, as it were, grandmaſter of the ſeraglio.

He is the firſt in dignity of all the white eunuchs, and is always near the grand ſeignior's perſon, he introduces ambaſſadors to audience; and all great affairs paſs through his hands before they come to that of the prince.

CAPIAS, in law, a writ of two ſorts, one before judgment in an action, and the other after; that before judgment is called *capias ad reſpondendum*, where an original is ſued out, to take the defendant, and make him anſwer the plaintiff; and that after judgment is the *capias ad ſatisfaciendum*. *&c.*

CAPIAS AD SATISFACIENDUM is a writ of execution that iſſues on a judgment obtained, and lies where any perſon recovers in a perſonal action, as for debt, damages, &c. in which caſes this writ iſſues to the ſheriff, commanding him to take the body of him againſt whom the debt is recovered, who is to be kept in priſon till he make ſatisfaction.

CAPIAS PRO FINE is a writ lying where a perſon is fined to the king, for ſome offence committed againſt a ſtatute, and he does not diſcharge the fine according to the judgment; therefore his body ſhall be taken by this writ, and committed to gaol till the fine is paid.

CAPIAS UTLEGATUM, a writ which lies againſt any one outlawed, upon any action perſonal or criminal, by which the ſheriff is ordered to apprehend the party outlawed, for not appearing on the exigent, and keep him in ſafe cuſtody till the day of return, when he is to preſent him to the court, to be there farther ordered for his contempt.

CAPIAS IN WITHERNAM, a writ that lies for cattle *in Withernam*; that is, where a diſtreſs taken is driven out of the county; ſo that the ſheriff cannot make a deliverance upon a replevin; then this writ iſſues, commanding the ſheriff to take as many beaſts of the diſtrainer.

CAPILLAMENTS *of the Nerves*, in anatomy, the fine fibres, or filaments, whereof the nerves are compoſed.

CAPILLAMENTS, in botany, thoſe ſmall threads or hairs which grow up in the middle of a flower, and are adorned with little knobs at the top: thoſe knobs are called the apices, or antheræ, of a flower; and the capilaments are called the ſtamina. See STAMINA.

CAPILLARY, an appellation given to things on account of their extreme fineneſs, or reſembling hair.

CAPILLARY FRACTURE, a ſmall fracture of the ſkull. See FRACTURE.

CAPILLARY PLANTS, ſuch plants as have no main ſtem, but their leaves ariſe from the root upon pedicles, and produce their ſeeds on the back of their leaves, as the fern, maiden-hair, &c.

CAPILLARY TUBES, in philoſophy, ſmall pipes of glaſs, whoſe canals are extremely narrow, their diameter being only a half, a third, or a fourth of a line.

The aſcent of water, &c. in capillary tubes, is a phænomenon that has long embarraſſed the philoſophers: for let one end of a glaſs tube open at both extremities, be immerged in water, the liquor within the tube will riſe to a conſiderable height above the external ſurface: or if two or more tubes are immerged in the ſame fluid, one a capillary tube, and the other of a larger bore, the fluid will aſcend higher in the former than in the latter; and this will be in a reciprocal ratio of the diameters of the tubes.

In order to account for this phænomenon, it will be neceſſary firſt to premiſe, that the attraction between the particles of glaſs and water is greater than the attraction between the particles of water themſelves: for if a glaſs tube be placed in a poſition parallel to the horizon, and a drop of water be applied to the under ſide of the tube, it will adhere to it; nor will it fall from the glaſs till its bulk and gravity are ſo far increaſed, as to overcome the attraction of the glaſs. Hence it is eaſy to conceive how ſenſibly ſuch a power muſt act on the ſurface of a fluid, not viſcid as water, contained within the ſmall cavity or bore of a glaſs-tube; as alſo that it will be proportionably ſtronger as the diameter of the bore is ſmaller; for it will be evident that the efficacy of the power is in the inverſe proportion of the diameter, when it is conſidered, that ſuch particles only as are in contact with the fluid, and thoſe immediately above the ſurface can effect it.

CAPILLARY *Veſſels*, in anatomy, the

ſmalleſt or extreme parts of the veins and arteries.

CAPILLITIUM *Veneris*, in philoſophy, the fine threads often ſeen floating in the air during the autumn. See AIR-THREADS.

CAPISTRUM, in ſurgery, the name of a bandage uſed in caſe of fractures of the jaw.

CAPITAL, in a general ſenſe, implies the head, chief, or principal of a thing.

CAPITAL, in geography, the principal city of a kingdom, province, or ſtate. See METROPOLIS.

CAPITAL, among merchants, the ſum of money which individuals advance to make up the common ſtock of a partnerſhip when it is firſt formed. It is alſo uſed to ſignify the ſtock with which a merchant firſt begins trade. It likewiſe denotes the fund or ſtock of a trading company or corporation.

CAPITAL *Crime*, a crime which ſubjects the criminal to a capital puniſhment or loſs of life.

CAPITAL, in architecture, the uppermoſt part of a column or pilaſter, ſerving as the head or crowning, placed immediately over the ſhaft, and under the the entablature.

The captital is the principal and eſſential part of an order of a column or pilaſter, and is of a different form in different orders, becoming the diſtinguiſhing characteriſtic between them. Vitruvius tells us that Callimachus, an ingenious ſtatuary of Athens, invented the firſt regular capital from the following accident. An Athenian old woman happening to place a baſket covered with a ſquare tile over the root of an acanthus, which grew on the grave of a young Corinthian lady, the plant ſhooting up the following ſpring, encompaſſed the baſket all round, till meeting with the tile it curled back in a kind of ſcrolls. The above ſculptor paſſing by, and obſerving it, executed a capital on this plan, repreſenting the tile by the abacus, the leaves of the acanthus by the ſcrolls, and the baſket by the body of the capital.

The Tuſcan CAPITAL is the moſt ſimple and unadorned of all the reſt; its members or parts are four only, viz. an abacus *a*: (plate XV. *fig.* 1.) an ovolo or quarter round *b*; a collarino or neck *c*; and an aſtragal *d*; the latter indeed properly belongs to the ſuſt or ſhaft.

The character which diſtinguiſhes this capital from the Doric, &c. is that the abacus is ſquare and quite plain, having no ogee or other moulding; and that there are no annulets under the ovolo. Authors indeed vary a little with regard to the character of the Tuſcan capital.

The height of this capital is the ſame with that of the baſe, viz. one module, or ſemidiameter. Its projecture is equal to that of the bottom of the column, viz. five eighths of the module.

The Doric CAPITAL has three annulets, or little ſquare members, underneath the ovolo, inſtead of the aſtragal in the Tuſcan, beſides the abacus, an ovolo and a neck, all which it has in common with the former; and a talon, cyma, or ogee, with a fillet over the abacus. See plate XV. *fig.* 2.

Vitruvius makes the height of this capital equal to half the diameter of the column below; and this height being divided into three parts, the firſt goes to the neck, the ſecond to the boultin, and the third to the uppermoſt part of the capital.

The Ionic CAPITAL is compoſed of three parts; an abacus, conſiſting of an ogee; under this a rind, which produces the volutes or ſcrolls, the moſt eſſential parts of this capital; and at the bottom an ovolo or quarter round. The aſtragal under the ovolo belongs to the ſhaft: the middle part is called the rind or bark, from its ſuppoſed reſemblance to the bark of a tree, laid on a vaſe, whoſe brim is repreſented by the ovolo, and ſeeming to have been ſhrunk up in drying, and to have been twiſted into the volutes. The ovolo is adorned with eggs, as they are ſometimes called from their oval form. See plate XV. *fig.* 3.

The height of this capital, according to M. Perault, is eighteen minutes, and its projecture one module ſeven tenths.

The Corinthian CAPITAL is the richeſt of all the orders, and imputed to Callimachus, an Athenian ſtatuary, as we have already obſerved. It is adorned with eight volutes *a*, (plate XV. *fig.* 5.) a double row of leaves *b*, and eight ſcrolls *c*, ſituated round a body called by ſome campana or bell, and by others tambour or drum.

The height of this capital is two modules and one third, and its projecture one module and one third.

The Compoſite CAPITAL is an invention of the Romans, and is compoſed of the double row of leaves in the Corinthian, and the volutes in the Ionic. See plate XV. *fig.* 6.

The height of this capital is two modules and one third, and the projecture one module and two thirds.

Plate XV

Facing Capital.

Fig.1.Tuscan Capital.

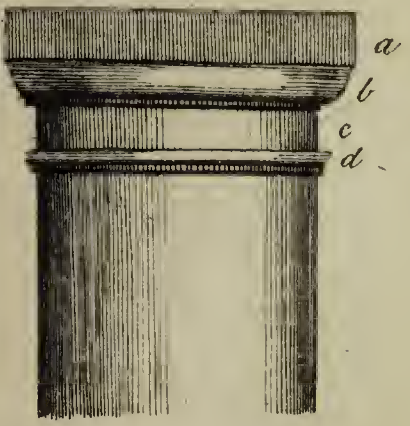


Fig.2.Doric Capital.

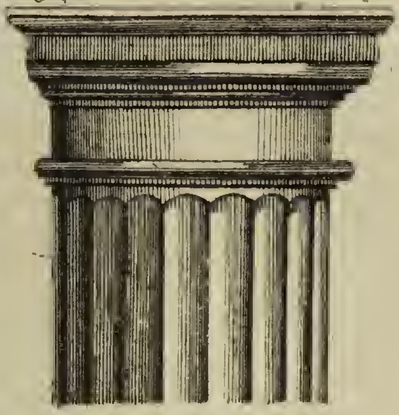


Fig.3 Antient Ionic Capital.

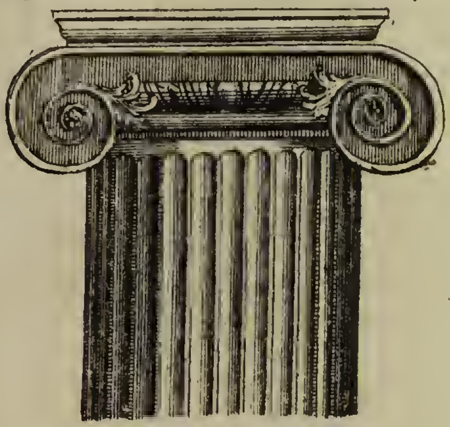


Fig.4.Modern Ionic Capital.

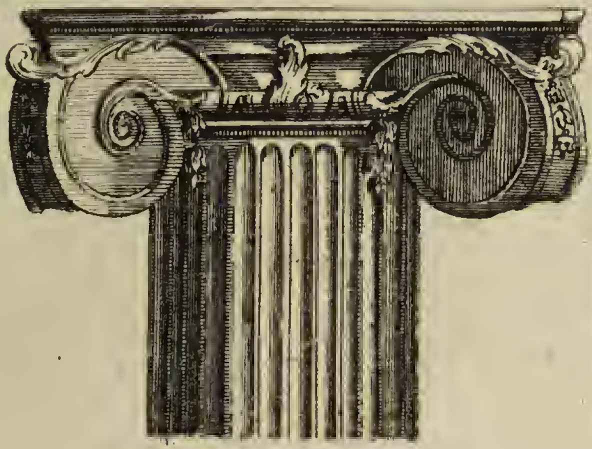


Fig.5.Corinthian Capital.

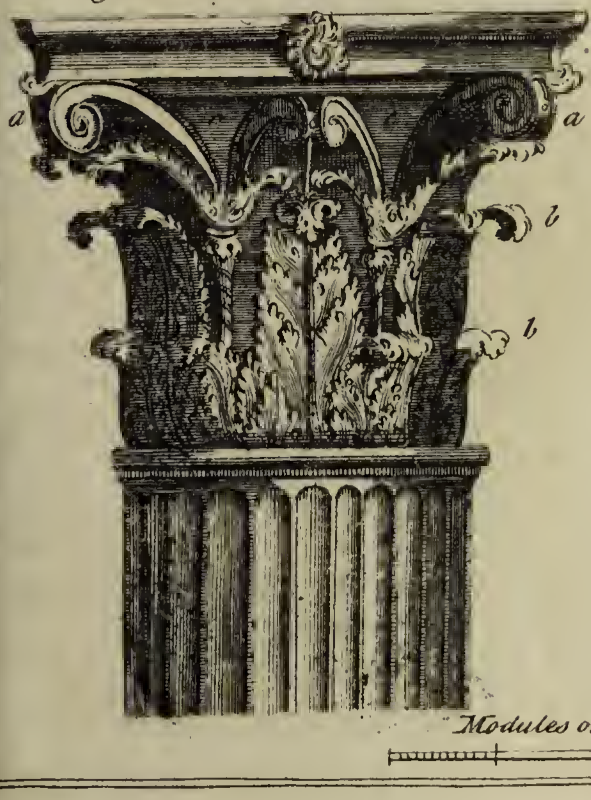
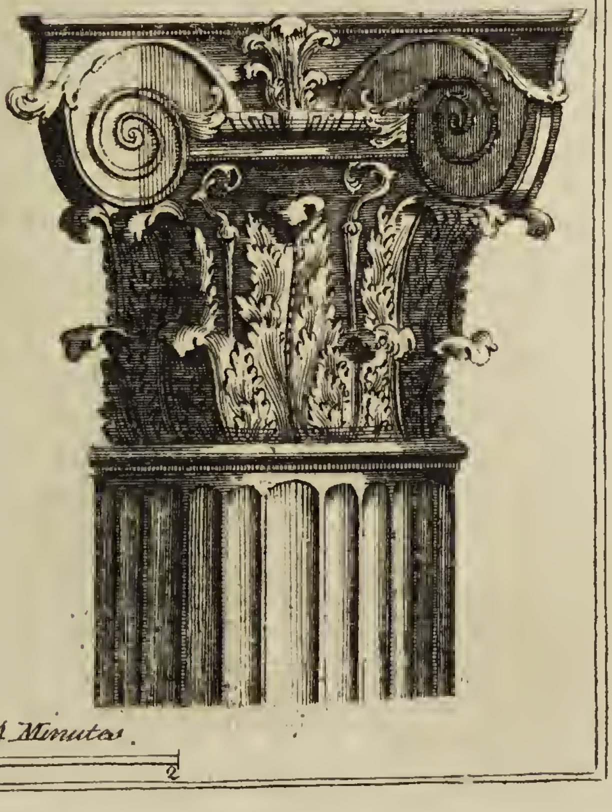
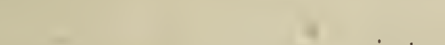


Fig.6.Composite Capital.



Modules or 24 Minutes.



Attic CAPITAL, that which has leaves of partition in the gorge.

Angular CAPITAL, that which ſupports the return of an entablature, at the corner of the projecture of a frontiſpiece.

CAPITAL *of a Balluſter*, that part which crowns a balluſter, reſembling ſometimes the capital of ſome order, generally the Ionic.

CAPITAL *of a Trigliph*, the plat-band over the trigliph, called by Vitruvius tænia. It is ſometimes a trigliph, and performs the office of a capital to the Doric pillaſter.

CAPITAL *of a Nich*, a kind of ſmall canopy made over a ſhallow nich, to cover a ſtatue.

CAPITAL *of a Lantern*, a covering, ſometimes of one form, and ſometimes of another, which finiſhes the lantern of a dome.

CAPITAL *of a Baſtion*, a line drawn from the point of the baſtion to the angle of the polygon; or from the point of the baſtion to the middle of the gorge.

CAPITALS, among printers, large or initial letters, with which all periods, verſes, &c. commence.

CAPITATION, a tax raiſed on each perſon in conſideration of his labour, induſtry, office, rank, &c.

CAPITOL, in antiquity, a celebrated caſtle erected on the ſummit of the Mons Capitolinus at Rome, and contained a temple dedicated to Jupiter, in which the ſenate formerly aſſembled. The nave of this ſtructure was ſacred to Jupiter, one of the wings to Juno, and the other to Minerva. In this beautiful edifice, which was richly ornamented, were contained the moſt ſacred depoſits of religion, ſuch as the ancylia, the books of the Sybils, &c.

CAPITULATION, in military affairs, a treaty between the garriſon or inhabitants of a place beſieged, and the beſiegers, for delivering up the place on certain conditions.

CAPITULATION, in the German polity, a contract made by the emperor with the electors, in the name of all the princes and ſtates of the empire, before he be declared emperor, and which he ratifies before he is raiſed to the Imperial dignity.

CAPITULUM, among botaniſts, the ſame with umbel. See UMBEL.

CAPIVI, or COPAIBA. See BALSAM *of Copaiba*.

CAPON, a cock chicken, gelded as ſoon as left by the hen, or at leaſt as ſoon as he begins to crow.

CAPONIERE, or CAPONNIERE, in fortification, a work ſunk four or five feet deep, on the glacis of a place; the earth that is thrown out of it ſerves to form a parapet of two or three feet high, furniſhed with loop-holes, or ſmall embraſſures; it is covered over head with ſtrong planks, on which are laid clays, or hurdles, to ſupport the earth with which the whole is covered. It will contain about fifteen or twenty men, who fire through the loop-holes upon the beſiegers. Caponieres are ſometimes made in the bottom of a dry moat.

CAPRA-SALTANS, in meteorology, a fiery meteor or exhalation, ſometimes ſeen in the atmoſphere. It forms an inflected line, reſembling in ſome meaſure the caperings of a goat; whence it has its name.

CAPRARIA, in botany, a genus of plants.

CAPREA, or CAPREOLUS, the roedeer, in natural hiſtory, an animal of the deer-kind, with rounded, erect, and ramoſe horns.

CAPRICORN, in aſtronomy, one of the twelve ſigns of the zodiac, repreſented on globes in the form of a goat, and in aſtronomical books with the following character, ♑. See GLOBE.

It is the tenth ſign in order, and conſiſts of nineteen ſtars in the catalogues of Ptolemy and Tycho Brahe; of twenty-nine in that of Hevelius; and of fifty-one in that of Mr. Flamſtead.

Tropic of CAPRICORN, a leſſer circle of the ſphere, parallel to the equinoctial, and 23° 29′ diſtant from it towards the ſouth-pole.

CAPRIOLES, in the manege, the leaps made by a horſe in the ſame place, without advancing, in ſuch a manner, that when he is at the height of the leap, he jerks out his hinder legs.

CAPSICUM, guinea-pepper, in the materia medica, long, roundiſh, taper, bright red pods, divided into two or three cells full of ſmall whitiſh ſeeds; the fruit of an annual plant, which is a native of the torrid zone, and raiſed in ſome of our gardens. Capſicum is ſometimes given, in very ſmall quantities, as one of the higheſt ſtimulants, in cold ſluggiſh phlegmatic conſtitutions, in ſome paralytic caſes, in relaxations and inſenſibility of the ſtomach, and for promoting the efficacy of aloetic medicines and the deobſtruent gums in uterine diſorders: but its principal uſe is at the table. A ſpecies of it, called, in the Weſt-Indies, bird-pepper, is the baſis of the powder brought from thence under the name of Cayan pepper. It is worth remarking, that this fruit, perhaps the ſtrongeſt of the aromatic ſtimulants, is uſed freely by the natives of the warmer climates; poſſibly theſe pungent antiſeptic kinds of ſubſtances may be more ſalubrious there than with us, as they ſeem qualified to reſiſt or correct the putredinous colliquation of the humours which immoderate heat produces.

CAPSQUARES, in gunnery, ſtrong plates of iron which come over the trunnions of a gun, and keep it in the carriage.

CAPSTAN, or CAPSTERN, in naval affairs, a ſtrong maſſy piece of timber let down through the decks of a ſhip, and reſting its foot, or axis, which is ſhod with iron, in an iron ſocket, called a ſaucer, which is fixed on a wooden block or ſtandard, called the ſtep, reſting on the beams. There are uſually two capſterns: they are uſed to heave the anchors up to the ſhip; to draw up or let down the top-maſts or any other weighty body; or to heave any great ſtrain in a level direction, as drawing the ſhip forward or backward, &c.

CAPSULATE, or CAPSULATED PLANTS, thoſe furniſhed with capſules for the reception of their ſeed.

CAPSULE, in a general ſenſe, implies a ſmall receptacle or coffer, in the form of a bag.

CAPSULE, among botaniſts, a kind of pericarpium or ſeed veſſel, compoſed of ſeveral elaſtic valves, which uſually burſts open at the points when the ſeed are ripe. It differs from a pod in being ſhort and roundiſh.

CAPSULA COMMUNIS, in anatomy, a tunic continuous with the peritonæum, and includes the branches of the vena porta and bilitary ducts, both as they approach the liver and within it.

CAPSULÆ-SEMINALES, the ſame with veſiculæ ſeminales. See Vesiculæ, &c.

CAPTAIN, a military officer, whereof there are various kinds.

CAPTAIN *of a Troop or Company*, an officer, who commands a troop of horſe or company of foot, under a colonel. In the ſame ſenſe, we ſay, captain of dragoons, of grenadiers, of marines, of invalids, &c. In the horſe and foot guards, the captains have the rank of colonels.

CAPTAIN *General*, he who commands in chief.

CAPTAIN *Lieutenant*, he who with the rank of captain, but the pay of lieutenant, commands a troop or company in the name and place of ſome other perſon who is diſpenſed with, on account of his quality, from performing the functions of his poſt. Thus the colonel, being uſually captain of the firſt company of his regiment; that company is commanded by his deputy, under the title of captain-lieutenant.

CAPTAIN BASHAW, or CAPONDAN BASHAW, in the polity of the Turks, ſignifies the Turkiſh high-admiral. He poſſeſſes the third office of the empire, and is inveſted with the ſame power at ſea, that the vizier has on ſhore. Solyman II. inſtituted this office in favour of the famous Barbaroſſa, with abſolute authority over the officers of the marine and arſenal, whom he may puniſh, caſhier, or put to death, as ſoon as he is without the Dardanelles.

CAPTAIN *of a Ship of War*, an officer who commands a ſhip of the line of battle, or a frigate bearing twenty guns or above. This officer ranks with a colonel in the army. The officers who command ſloops of war, bomb-ketches, fire-ſhips, or armed ſhips, are only called commanders; and theſe rank with majors in the army.

CAPTION, in law, is where a commiſſion is executed, and the commiſſioners ſubſcribe their names to a certificate, declaring when and where the commiſſion was executed. It relates chiefly to commiſſions to take anſwers in chancery, and depoſitions of witneſſes, and take fines of lands, &c.

CAPTIVE, a perſon taken by the enemy in war, or by a pirate or corſair. See Slave or Pirate.

CAPTIVITY, a puniſhment which God inflicted upon his people for their vices and infidelities. The firſt of theſe captivities is that of Egypt, from which Moſes delivered them; after which are reckoned ſix during the government of the judges: but the greateſt and moſt remarkable were thoſe of Judah and Iſrael, which happened under the kings of each of theſe kingdoms. It is generally believed that the ten tribes of Iſrael never came back again after their diſperſion; and Joſephus and St. Jerom are of this opinion; nevertheleſs, when we examine the writings of the prophets, we find the return of Iſrael from captivity pointed out in a manner almoſt as clear as that of the tribes of Benjamin and Judah. The captivities of Judah are generally reckoned four; the fourth and laſt of which fell in the year of the world 3416, under Zedekiah; and from this period begin the ſeventy years captivity, foretold by Jeremiah.

CAPTURE, prizes taken by the privateers, in time of war, which are to be divided between the captors. See PRIZE.

CAPUT, in anatomy. See HEAD.

CAPUT CONCUTIENS, a muſcle of the neck, otherwiſe called tranſverſarius ſecundus. See TRANSVERSARIUS.

CAPUT DRACONIS, the dragon's head, in aſtronomy, the aſcending node of the moon. See DRACO.

CAPUT GALLINAGINIS, in anatomy, a kind of ſeptum, or ſpongeous border at the extremities of the apertures of each of the veſiculæ ſeminales, ſerving to hinder the ſeed coming from one ſide, from ruſhing upon, and ſo ſtopping the diſcharge of the other.

CAPUT MORTUUM, in chemiſtry, that thick, dry matter which remains after diſtillation of any thing, but eſpecially of minerals.

The caput mortuum, called alſo terra damnata, is found in form of a friable, porous matter, without taſte or ſmell: it is ranked among the chemical elements, and ſuppoſed to conſtitute the dry, fixed, earthy, and ſolid parts of all bodies whatever. It is what the chemiſts call a paſſive element or principle, ſerving as the baſis or ſupport of the active ones.

CAR. See CARR.

CARABE. See AMBER.

CARABINE, a fire-arm, ſhorter than a muſket, borne by the light horſe, hanging at a belt over the left ſhoulder.

CARABINEERS, or CARABINIERS, regiments of light horſe, carrying longer carabines than the reſt, and uſed ſometimes on foot.

CARACOL, in the menage, the half turn which a horſeman makes, either to the right or left. In the army, the horſe always make a caracol after each diſcharge, in order to paſs to the rear of the ſquadron.

CARACOL, in architecture, a ſtair-caſe in a helix or ſpiral form.

CARACT, CARAT, or CARRAT, the name of that weight which expreſſes the degree of fineneſs that gold is of. The mint-maſters have fixed the purity of gold at twenty-four caracts; though it is not poſſible ſo to purify and refine that metal, but it will want ſtill about one fourth part of a caract in abſolute purity and perfection. The caract is divided into 1-4th, 1-8th, 1-16th, and 1-32d. Theſe degrees ſerve to diſtinguiſh the greater or leſſer quantity of alloy therein contained: for inſtance, gold of twenty-two caracts is that which has two parts of ſilver, or of any other metal, and twenty-two of fine gold.

CARACT, weight which goldſmiths and jewellers uſe wherewith to weigh precious ſtones and pearls. This caract weighs four grains, but ſomething lighter than the grains of other weights. Each of theſe grains is ſubdivided into 1-half, 1-4th, 1-8th, 1-16th, &c.

CARANNA, a concrete reſinous juice, exuding from a large tree, of which we have no particular account: it is brought from New Spain and ſome other parts of America in little maſſes, rolled up in leaves of flags; externally of a darkiſh browniſh colour, internally brown with a caſt of red, variegated with irregular white ſtreaks; ſomewhat ſoft and tenacious as it firſt comes over, but in keeping grows dry and friable. This juice has an agreeable ſmell, eſpecially when heated, and a bitteriſh and ſlightly pungent taſte.

The watery tincture ſmells agreeably of the caranna, and is in taſte bitteriſh and ſomewhat warm. But,

The ſpirituous tincture is both in ſmell and taſte ſtronger and more agreeable than the watery. Caranna has been chiefly employed as an ingredient in vulnerary balſams, corroborant and diſcutient plaſters, and other external applications. It has very ſeldom been given internally and is now almoſt wholly in diſuſe.

CARAT, or CARACT. See CARACT.

CARAVAN, or CARAVANNE, in the Eaſt, a company or aſſembly of travellers and pilgrims, or of merchants, who for their greater ſecurity, and in order to aſſiſt each other, march in a body through the deſarts, and other dangerous places, which are infeſted with Arabs or robbers. There is a chief, or aga, who commands the caravan, and is attended by a certain number of janizaries, or other militia; which number of ſoldiers muſt be ſufficient to defend them, and conduct them with ſafety to the places for which they are deſigned, and on a day appointed. The caravan encamps every evening near ſuch wells, or brooks, as their guides are acquainted with; and there is a ſtrict diſcipline obſerved upon this occaſion, as in armies in time of war. Their beaſts of burden are moſt commonly camels, who are capable of undergoing a very great fatigue.

CARAVANIER, one who leads the camels and other beaſts of burden, who are commonly uſed in the caravans in the Eaſt.

CARAVANSERA, or KARAVANSERA, a place appointed for receiving and loading the caravans.

CARAWAY, CARRAWAY, the Engliſh name of the carui of botaniſts. See CARUI.

CARBUNCLE, in natural hiſtory, an elegant gem, of a deep red, with an admixture of ſcarlet. This gem was known among the ancients by the name of anthrax. It is uſually found pure and faultleſs, and is of the ſame degree of hardneſs with ſapphire: it is naturally of an angular figure; and is found adhering, by its baſe, to a heavy and ferruginous ſtone of the emery kind: its uſual ſize is near a quarter of an inch in length, and two thirds of that in diameter in its thickeſt parts: when held up againſt the ſun it loſes its deep tinge, and becomes exactly of the colour of a burning charcoal; whence the propriety of the name which the ancients gave it. It bears the fire unaltered, not parting with its colour, nor becoming at all paler by it. It is only found in the Eaſt-Indies, and there but very rarely.

CARBUNCLE, or ANTHRAX, in ſurgery, an inflammation which ariſes, in time of the plague, with a veſicle or bliſter, like thoſe produced by burning. This inflammation, for the moſt part, terminates in a ſphacelus, and putrifies the ſubjacent parts down to the bone, they becoming as black as a coal. A carbuncle always breaks out very ſpeedily, even in the ſpace of an hour or two, attended with heat and pain: as ſoon as it is opened, it diſcharges a livid ſanies, or ſometimes a limpid water: it is black within, which is a ſign that the ſphacelus has ſeized the ſubjacent parts, and is making its progreſs; but the putrid fleſh in thoſe who recover ſuppurates, and parts from the ſound. The ſize of theſe peſtilential bliſters is various, more or leſs; as is alſo their number in the patient; for there is no part in the body which they do not infeſt, and they generally appear in company with buboes. See BUBOE.

Thoſe carbuncles which riſe in the face, neck, breaſt, or armpits, are obſerved to be of the worſt kind; for they generally kill the patient.

In the external treatment, ſome of the modern phyſicians uſe only ſcarification in this caſe, with very good ſucceſs; others open the eruptions with a pair of ſciſſars and having diſcharged the matter, they frequently waſh the carbuncle with *ſp. vin. campb.* or *ſp. vin.* wherein has been digeſted a little theriaca; they afterwards apply a maturating cataplaſm, which is to be continued till the carbuncle ſeparates from the ſound parrs; then they cut it out at once.

CARBUNCLE, in heraldry, a charge or bearing, conſiſting of eight radii, four whereof make a common croſs, and the other four a ſaltier.

CARCASE, in architecture, the ſhell or ribs of a houſe, containing the partitions, floors, and rafters, made by carpenters; or it is the timber-work, or as it were the ſkeleton, of a houſe, before it is lathed and plaiſtered; it is otherwiſe called the framing.

CARCASE, or CARCASS, in the art of war, an iron-caſe or hollow capacity, about the bigneſs of a bomb, of an oval figure, made of ribs of iron, filled with combuſtible matters. The deſign of it is to be thrown out of a mortar to ſet houſes on fire, and do other execution. It has two or three apertures through which the fire is to blaze.

CARDS, in gaming little pieces of fine thin paſteboard of an oblong figure, of ſeveral ſizes, but moſt commonly in England three inches and half long, and two and a half broad, on which are painted ſeveral points and figures. Cards were firſt invented in France for the king's amuſement, in 1391.

CARD, among manufacturers, an inſtrument or comb, compoſed of a great number of ſmall pieces or teeth of iron wire, incurvated or bent, like a hook, near the middle, and faſtened very cloſely together by the baſes or feet in rows.

CARD-MAKING, the buſineſs of making cards for the manufacturers.

There are always two cards neceſſary in the operation of carding, and between which the materials to be carded are placed.

CARDAMINE, lady's ſmock, in botany, a genus of plants, the corolla of which, conſiſting of four petals, is oval, oblong, open, and terminating in erect ungues of double the length of the cup. The fruit is a long pod, of a compreſſed cylindric ſhape, compoſed of two valves, and containing two cells, wherein are ſeveral roundiſh ſeeds.

CARDAMOM, in the materia medica, a dried fruit or pod, brought from the Eaſt Indies; divided internally into three cells, in each of which are contained two rows of triangular ſeeds, of a browniſh colour on the outſide and white within. They are diſtinguiſhed by the epithets *major* and *minor.*

CARDAMOMUM *Minor*, the leſſer cardamom, has ſhort triangular huſks, ſcarce half an inch in length; the produce of a plant with reed-like ſtalks, and is deſcribed in the *Hortus Malabaricus*, under the name of elettari.

Theſe ſeeds are an elegant and uſeful aromatic, of a grateful ſmell and flavour, very warm, yet not fiery, or ſubject, like the ſpices of the pepper kind, to produce immoderate heat. The huſks ſhould be ſeparated only at the time of uſe; for the ſeeds ſoon loſe a part of their flavour, in being kept without this defence.

Tinctures of this ſpice, both in rectified and proof ſpirit, are more agreeable than the watery infuſions: and proof ſpirit impregnated with its flavour by diſtillation, more agreeable than the ſimple diſtilled water. A tincture of ſix ounces of the ſeeds in a quart of proof ſpirit, and a ſpirituous water more lightly flavoured with them, by drawing off a gallon of proof ſpirit from four ounces, are kept in the ſhops, and occaſionally made uſe of as pleaſant warm cordials, and for flavouring other medicines. It is obſerved, that none of the aromatics anſwer, in general, ſo well as the tincture of this ſpice, for rendering mineral waters and other ſaline liquors acceptable to the ſtomach.

CARDAMOMUS *Majus*, the greater cardamom, called alſo grana Paradiſi. See GRANA *Paradiſi.*

CARDIAC, an appellation given to ſuch medicines as preſerve or increaſe the ſtrength of the heart, and by that means the vital forces, though they do not immediately work upon the heart, nor are particularly appropriated to the corroboration of that part. This effect they perform either by repleniſhing the exhauſted veſſels with good humours, or exciting motion when it is required: therefore nutritives duly choſen, with reſpect to particular conſtitutions, belong to this claſs, as well as aſtringent corroboratives and ſtimulants. All the modern diſpenſatories are full of cardiacs or cordials, both of the dry and liquid kind; but the beſt are thoſe which remove the diſorder, of which lowneſs of ſpirits is the conſequence; and next to theſe is wine, which adminiſtered in proper quantities, and more or leſs diluted, as circumſtances require, will generally anſwer better purpoſes than more pompous cordials, whilſt it is leſs capable of doing miſchief.

CARDIACA, mother-wort, a diſtinct genus of plants. It is perennial, grows wild in waſte grounds, and flowers from the middle to the end of ſummer. This plant is ſaid to be uſeful in diſorders of the ſtomach proceeding from thick phlegm; to looſen the belly; to promote perſpiration, urine, and the uterine purgations. Such, in effect, are the virtues which may be expected from its ſenſible qualities. The leaves and the tops have a moderately ſtrong ſmell, not very agreeable; and a very bitter taſte. In keeping for ſome time, or on boiling them in water, their ſmell is diſſipated: the decoction, inſpiſſated to the conſiſtence of an extract, diſcovers to the taſte a ſtrong penetrating ſubſaline bitterneſs.

CARDIACUS PLEXUS, in anatomy, a plexus or piece of net-work, formed of a ramification of the par vagnum, or eighth pair of nerves.

CARDIALGIA, in phyſic, a pain at the mouth of the ſtomach, or heart-burn.

* **CARDIGAN**, the capital town of Cardiganſhire, in South Wales, is ſeated on the river Teivy, on the Iriſh channel. It is governed by a mayor, thirteen aldermen, thirteen common-council-men, &c. Here are the ruins of a caſtle which was built by Gilbert de Clare, about the year 1160. Here was alſo a priory of black monks, ſubordinate to the abbey of Chertſey. It ſends one member to parliament, and has two markets held on Tueſdays and Saturdays. Its fairs are February 13, and April 5, for ſmall horſes and pedlars ware. On September 8, and December 19, for ſmall horſes, pedlars ware, and cattle. It is two hundred and twenty-five miles weſt-north-weſt of London. Long. 4. 38. W. Lat. 52. 15. N.

* **CARDIGANSHIRE**, a county in South Wales, bounded on the north by Merionethſhire and Montgomeryſhire, on the eaſt by Radnorſhire and Brecknockſhire, on the weſt by the Iriſh Sea, and on the ſouth by Carmarthenſhire. Its length is about forty-four miles, and it's breadth near twenty. The air, as in other parts of Wales, varies with the ſoil. There are cattle bred in all parts; but they have neither wood nor coals of their own for fuel;

fuel ; they have rich lead mines and fiſh, in plenty, with fowls both tame and wild. The principal rivers are the Teivy, the Ridol, and the Iſtwith. This county has five market towns, viz. Cardigan, Aberiſtwith, Llanbadarnvawn, Llanbedar, and Tregaron ; with twenty-ſeven pariſhes. It ſends two members to parliament, one for the county, and one for Cardigan.

CARDINAL, in a general ſenſe, an appellation given to things on account of their pre-eminence ; as

CARDINAL VIRTUES, theſe are four, juſtice, prudence, temperance, and fortitude, upon which all the reſt depend.

CARDINAL Points, in coſmography, the eaſt, weſt, north, and ſouth. See Point.

CARDINAL WINDS, thoſe that blow from the cardinal points.

CARDINAL SIGNS, in the zodiac, are Aries, Libra, Cancer, and Capricorn.

CARDINAL, an eccleſiaſtical prince, in the Romiſh church, being one who has a voice in the conclave at the election of a pope. The cardinals were originally nothing more than deacons, to whom was intruſted the care of diſtributing alms to the poor of the ſeveral quarters of Rome. They began to be called cardinals during the pontificate of St. Sylveſter ; an appellation derived to them from the cardinal prieſts, in the primitive church, being the chief prieſts of a pariſh, and next in dignity to the biſhop. Afterwards this office grew much more conſiderable, and by ſmall degrees arrived at its preſent height, in which it is the reward of ſuch as have ſerved the church and his holineſs well ; even princes thinking it no diminution of their honour to become members of the college of cardinals.

The cardinals compoſe the pope's council, or ſenate ; and there is, in the Vatican, a conſtitution of pope John, which declares, that as the pope repreſents Moſes, ſo the cardinals repreſent the ſeventy elders. It was pope Pius VI. who firſt decreed that the pope ſhould be choſen only by the college of cardinals ; though ſome carry up this right as high as Nicolas II. in 1058. The cardinals began to wear the red-hat, at the council of Lyons in 1243. Till the time of Urban VIII. they were ſtiled only Moſt Illuſtrious : afterwards, by a decree of that pope, they had the title of Eminence given them.

When his holineſs has reſolved to make a new promotion of cardinals, he calls a private conſiſtory, in which he declares his intention to all the cardinals preſent, and names to them the perſons he intends to honour with the red-hat : he then gives them eight or ten days to conſider of it ; at the expiration of which, he calls another conſiſtory, in which he takes the opinion of each cardinal, who have all full and entire liberty of giving their voice pro or con. The cardinals are divided into three claſſes, or orders, conſiſting of ſix biſhops, ſixty prieſts, and fourteen deacons, making in all ſeventy ; which conſtitute what they call the ſacred college. The number of cardinal biſhops has been always the ſame ; but that of cardinal prieſts and deacons is not fixed. Till the year 1125, the college conſiſted of fifty-two or fifty-three. The council of Conſtance reduced them to twenty-four, and Sextus IV. raiſed them again to fifty-three. The ſix cardinal biſhops are thoſe of Oſtia, Porro, Sabina, Paleſtrina, Fraſcati, and Albano. The privileges of the cardinals are very great ; they have an abſolute power in the church during the vacancy of the holy-ſee : they have a right to elect the new pope ; and are the only perſons on whom the choice can fall. Moſt of the grand offices in the court of Rome are filled by cardinals. The dreſs of a cardinal is a red ſoutanne, a rochet, a ſhort purple mantle, and the red-hat. When they are ſent to the courts of princes, it is in quality of legates *a latere* ; and when they are appointed governors of towns, their government is called by the name of legation. There are five legations, viz. thoſe of Avignon, Ferrara, Bologna, Ravenna, and Perugia.

CARDIOSPERMUM, in botany, a genus of plants, the flower of which conſiſts of four petals, and is cruciform ; the fruit is a roundiſh trilocular capſule, containing a ſingle cordated ſeed.

CARDO, in anatomy, the ſecond vertebra of the neck.

CARDUUS, the thiſtle, in botany, a genus of plants, the compound flower of which is tubulous and uniform ; the proper flower is monopetalous, of a funnel form, with a very ſmall tube and erect limb, and divided into five linear equal ſegments. There is no pericarpium ; but the cup is a little connivent, and contains ſolitary, vertically-ovated, quadrangular ſeeds, with two oppoſite angles obliterated, and crowned with a very long down.

CARDUUS *Benedictus*, holy thiſtle, a plant with rough, narrow, jagged leaves, terminating in ſoft prickles; and large, hairy, branched ſtalks, leaning to the ground; on the tops of which grow large, ſcaly, prickly heads, including a number of yellow floſculi, which are followed by oblong ſtriated ſeeds, incloſed in down. It is a native of Spain, and ſome of the iſlands of the Archipelago; and ſown annually with us in gardens. The leaves of carduus have a penetrating bitter taſte, not very ſtrong, or very durable in the mouth; accompanied, in their recent ſtate, with ſomewhat of an ungrateful flavour, which they ſoon loſe in keeping. The herb, when thoroughly dried, ſhould be hung up looſely in an airy place, being very ſubject, if preſſed cloſe, to rot or grow mouldy.

The virtues of this plant ſeem to be little attended to in the preſent practice. The nauſeous decoction is ſometimes uſed to excite vomiting, and a ſtrong infuſion to promote the operation of other emetics, but this elegant bitter, when extracted from the offenſive parts of the herb, may be advantageouſly applied to other purpoſes. We have frequently obſerved excellent effects from a light infuſion or carduus, in weakneſs of appetite and indigeſtion, where the ſtomach was injured by irregularities, and oppreſſed by viſcid phlegm: nor have we found any one medicine of the bitter kind to ſit ſo eaſily on weak ſtomachs, or to heat ſo little. Theſe infuſions, taken freely, promote the natural ſecretions; drank warm in bed, they commonly increaſe perſpiration or excite ſweat; and as they act with great mildneſs, not heating or irritating conſiderably, they have been uſed, in this intention, in acute as well as chronical diſeaſes. The ſeeds of carduus are likewiſe conſiderably bitter, and have ſometimes been uſed as ſudorifics or diaphoretics, in the form of an emulſion.

CAREENING, in naval affairs, is uſed to heave the ſhip's ſide ſo low in the water that her bottom, being elevated above its ſurface on the other ſide, may be cleaned of any filth which adheres to it during a long voyage, as ſhells, ooze, ſea-weeds, &c. This is performed by applying flaming faggots, furze, or other ſuch materials to the bilge; and the fire, thus catching on the tar, pitch, or other ſtuff, which had formerly been laid on the bottom to preſerve it, continues burning till all the excrement is looſened and falls off from the bottom; after this it is covered with a compoſition of tallow, ſulphur, turpentine, &c. and one ſide being cleaned in this manner, the other is heaved out for the ſame purpoſe. When a ſhip is laid on a careen, every thing is taken out of her: a ſhip is alſo ſaid to careen when ſhe lies down at ſea, as preſſed with a weight of ſail.

CARET, among grammarians, a character marked thus ‸, ſignifying that ſomething is added on the margin, or interlined, which ought to have been inſerted where the caret ſtands.

CAREX, in botany, a genus of plants: in the male flower there is no corolla; in the female there are no petals; but the nectarium is of an ovato-oblong form, inflated, bidentated at the top: there is no pericarpium; but the nectarium growing large, contains a ſingle ovato-acute triquetrous ſeed, with one of its angles leſs than the reſt.

CARGO, in naval affairs, the merchant goods with which a ſhip is freighted, and proceeds from port to port.

CARIA, in zoology, a ſpecies of ant, common in the Eaſt-Indies, and much larger than thoſe with us. They are very miſchievous, living in large communities, and throwing up hills of earth five or ſix feet high.

CARICA, in botany, a genus of plants, the male flower of which is monopetalous, of a funnel-form, with a limb divided into five lanceolat-linear, obtuſe obliquely ſpiral ſegments; the female flower is pentapetalous, the petals being lanceolato linear, obtuſe on both ſides, very long, erect below the middle, but above the middle bending outwards and downwards: the fruit is a very large berry, angulated with five furrows, having one cell, and containing numerous, ovated, ſulcated, and tunicated ſeeds.

CARIES, in ſurgery, a diſorder in which the bone, from whatever cauſe, is deprived of its perioſteum; and having loſt its natural heat and colour, becomes fatty, yellow, brown, and at length black; this is the firſt and lighteſt degree of the diſorder.

CARIOUS, partaking of the nature of a caries. See CARIES.

CARLINA, the carline thiſtle, in botany, a genus of plants, with long, narrow, deeply jagged, and very prickly leaves, lying on the ground; in the middle of which grows a large roundiſh head, without any ſtalk, encompaſſed with ſmaller leaves, full of ſharp prickles: the flower iſſues from the middle of the head.

* CARMARTHEN, the capital of Carmarthenſhire, ſituated on the river Terog, 206 miles weſt of London: It gives title of Marquis to the family of Oſborn,

duke of Leeds, and ſends one member to Parliament.

* CARLISLE, the capital city of Cumberland, on the ſouth of the river Eden, between the Petterel on the eaſt, and the Caude on the weſt. It is ſurrounded by a ſtrong ſtone wall, and has a caſtle in the weſtern part of it, and a citadel in the eaſtern part, built by Henry VIII. It flouriſhed in the time of the Romans, as appears from the antiquities that are to be met with here. At the departure of the Romans this city was ruined by the Scots and Picts, and was not rebuilt till the year 680, by Egfrid, who encompaſſed it with a wall, and repaired the church. In the eighth and ninth centuries the whole country and city was ruined again, by the incurſions of the Norwegians and Danes. In this condition it remained till the time of William Rufus, who repaired the walls and the caſtle, and cauſed the houſes to be rebuilt. It was fortified by Henry I. as a barrier againſt Scotland. It was twice taken by the Scots, and afterwards burnt accidentally, in the reign of Richard II. The cathedral, the ſuburbs, and one thouſand five hundred houſes were deſtroyed at that time. It is at preſent in a good condition, and has three gates, the Engliſh on the ſouth, the Scotch on the north, and the Iriſh on the weſt. It has two pariſhes, and two churches, St. Cuthbert, and St. Mary's, the laſt of which is the cathedral, and is ſeparated from the town by a wall of its own. The eaſtern part, which is the neweſt, is a curious piece of workmanſhip. The choir has a ſtately eaſt window forty-eight feet high, and thirty broad, adorned with curious pillars. The roof is elegantly vaulted with wood, and is embelliſhed with the arms of England and France quartered, as alſo with Piercy's, Lucy's, Warren's, Mowbray's, and many others. The Picts wall, which was built acroſs the country from Newcaſtle, terminates near this place. It was taken by the rebels, Nov. 15, 1745, and retaken by the duke of Cumberland, the 10th of December following. It is governed by a mayor, twelve aldermen, two bailiffs, &c. and has a conſiderable market on Saturday. The trade is chiefly in fuſtians. The fairs are Auguſt 26, for horned cattle and linen; September 19, for horſes and horned cattle; and the firſt or ſecond Saturdays after Oct. 10, for Scotch horned cattle. It is three hundred and one miles north-north-weſt of London. Long. 2, 29. W. Lat. 54. 45. N. It ſends two members to parliament.

CARMELITES, or WHITE-FRIARS, an order of our Lady of Mount Carmel, one of the four orders of mendicants. They pretend to derive their original from the prophets Elijah and Eliſha. Their original rules contained ſixteen articles, which confined them to their cells, and enjoined them to employ themſelves day and night in prayer; prohibited the brethren having any property; enjoined faſting, from the feaſt of the exaltation of the Holy Croſs till Eaſter, excepting on Sundays; abſtinence at all times from fleſh was enjoined; another article obliged them to perform manual labour; impoſed a ſtrict ſilence on them, from veſpers till the tierce the next day; however, theſe conſtitutions have been in ſome reſpects altered. This order is ſo much increaſed, that it has at preſent thirty-eight provinces, beſides the congregation of Mantua, in which there are fifty-four monaſteries, under a vicar-general, and the congregation of barefooted Carmelites in Italy and Spain, which have their peculiar generals. If a monk of this order lie with a woman, he is prohibited ſaying maſs for three or four years, is declared infamous, and obliged to diſcipline himſelf publicly once a week: if he is again guilty of the ſame offence, his penance is doubled; and if a third time, he is expelled the order.

CARMINATIVES, in pharmacy, medicines appropriated to expel wind. Many ſeem to be ſtrangers to this term; as it does not appear to carry in it any thing expreſſive of the medicinal efficacy of thoſe ſimples which paſs under its denomination. And as thoſe medicines now under this name, are of quick efficacy, and the conſequences thereof, in many inſtances, ſurpriſing; and the moſt violent pains, ſometimes ariſing from pent-up wind, immediately ceaſing upon its diſperſion; ſuch medicines as give relief, in this caſe, are more properly termed carminatives, as if they cured by enchantment as the term ſeems to imply.

As to the cure, whatſoever will rarefy and render ſuch collections of vapour thinner, muſt conduce to their utter diſcharge out of the body; and conſequently remove ther uneaſineſſes which ariſe from their detention. And as all thoſe things that paſs under this denomination are warm, and conſiſt of very light ſubtile parts, it is eaſy to conceive how a mixture of ſuch particles may agitate and rarefy thoſe flatulencies, ſo as to facilitate their expulſion. If the obſtruction be not great, the rarefaction of the wind, upon taking ſuch a medicine, is often ſo ſudden, and likewiſe its diſcharge, that it goes off like the exploſion of gunpowder.

CARMINE, a beautiful crimſon colour, formed of the tinging ſubſtance of cochineal, brightened with aquafortis by a proceſs ſimilar to that uſed for dying ſcarlet in grain. It is of great advantage in painting, as well in water as varniſh, both on account of its beauty and ſtanding well; but it will not mix with oil ſo as to have the due effect in that kind of painting.

The ſuperiority of the French carmine, as well as of the ſcarlet dye, has been attributed to ſome qualities in the air and water of France; but nothing is more abſurd than this ſuppoſition, as the air has very little concern in the production of carmine; and the qualities of the water, if different, might be artifically changed. But the difference itſelf betwixt the Engliſh and French carmine, which does not lie in the beauty of the colour, but in its durableneſs and fixed nature, clearly evinces a diverſity in the preparation: and leaves no room to doubt, but that the carmine might be equally well made in this country, if we were thoroughly maſters of the art. At preſent we buy of France the far greateſt part of what is conſumed, which is more than can be eaſily imagined, till we recollect how frequent the uſe of red is grown among the Engliſh ladies; and that this is almoſt the only ſubſtance uſed in this country as a red paint for living faces.

* CARNARVON, a borough town of Carnarvonſhire, in North Wales, ſituated near the ſea, oppoſite to Angleſea, 8 miles ſouth-weſt of Bangor, and 251 north-weſt of London. It gives title of marquis to the family of Bridges, duke of Chandos, and ſends one member to parliament.

CARNATION, in botany, a name given to ſeveral ſpecies of caryophyllus, or pink, on account of their beautiful fleſh-colour.

Spaniſh CARNATION, a name ſometimes uſed for the poinciana of botaniſts.

CARNATION *Colour*, among painters, is underſtood of all the parts of a picture, which repreſent fleſh, or which are naked and without drapery.

The various colouring for carnations, may be eaſily produced, by taking more or leſs red, blue, yellow, or biſtre, whether for the firſt colouring, or for the finiſhing: the colour for women ſhould be bluiſh; for children a little red, both freſh and gay; and for men it ſhould incline to yellow, eſpecially if they are old.

CARNELIAN, ſarda, in natural hiſtory, a precious ſtone, of which there are three kinds, diſtinguiſhed by three colours, a red, a yellow, and a white. The fineſt carnelians are thoſe of the Eaſt-Indies; but there are very beautiful ones found in the rivers of Sileſia and Bohemia; and we hove ſome tolerable ones in England. Though the ancients have recommended the carnelian as an aſtringent, and attributed a number of fanciful virtues to it, we know no other uſe of the ſtone, than the engraving ſeals on it, to which purpoſe it is excellently adapted, as being not too hard for cutting, and yet hard enough not to be liable to accidents, to take a good poliſh, and to ſeparate eaſily from the wax.

CARNIVAL, or CARNAVAL, a time of rejoicing, a ſeaſon of mirth, obſerved with great ſolemnity by the Italians, particularly at Venice, holding from Twelfth-day till Lent.

CARNIVOROUS, an appellation given to thoſe animals which naturally feed on live fleſh.

CARNOSITY, a term ſometimes uſed for an excreſcence, or tubercle, in the urethra.

CAROB-TREE, in botany, a genus of plants, the fruit of which is a pod of about a ſpan long, of a flattiſh figure, containing a brown coloured ſweet pulp, which is uſed by the Egyptians and Arabians as ſugar. The tree is found wild alſo in ſome of the ſouthern parts of Europe: it is raiſed among us in the gardens of the curious, but does not in this climate ripen its fruit. The pulp of the carob is diſſolved more effectually by water than by ſpirit. The watery extracts more agreeable than the ſpiritous.

* CAROLINA, including Georgia, lies between thirty-one and thirty-ſix degrees of north latitude. It is bounded on the eaſt by the Atlantic ocean; on the north by Virginia; on the ſouth by Florida; and on the weſt by the Miſſiſippi. In 1663, king Charles II. made a grant of Carolina to ſeveral lords and gentlemen, from Virginia to thirty-one degrees of latitude, and weſtward as far as the South Sea, reſerving a quit-rent of twenty marks yearly. In 1728, the proprietors thought fit to ſell their right to his majeſty king George II. which agreement was confirmed by act of parliament, reſerving an eighth part to lord Carteret, now lord Granville.

In 1732 a charter was granted to truſtees for making a ſettlement in that part of Carolina now called Georgia, including all that country which lies from the northern ſtream of the Savanna river along the coaſt, to the moſt ſouthern ſtream of Atalamaha river, and weſt from the mouths of the ſaid rivers reſpectively, in direct lines to the South Sea. This country is ſeated between the extremities of heat and cold, though the heat is more troubleſome in ſummer than the cold in winter; their winters being very ſhort, and the froſty mornings frequently ſucceeded by warm days. The air is generally ſerene and clear the greateſt part of the year. The great rains are in winter, though they are not without heavy ſhowers at midſummer; add to theſe the conſtant dews that fall in the night, which refreſh the ground, and ſupply the plants with moiſture. In North Carolina the north-weſt winds in the winter occaſion very ſevere weather, but they are of ſhort continuance. The depth of winter is towards the latter end of February, and then the ice is not ſtrong enough to bear a man's weight. The king appoints a governor, who, with two houſes inſtituted in imitation of the lords and commons in England, have the management; however they are to make no laws but what are agreeable to the mother-country. They export large quantities yearly of rice, pitch, tar, turpentine, deer-ſkins, and timber for building; cypreſs, cedar, ſaſſafras, oak, walnut and pine. Beſides theſe they are able to ſend out beef, pork, tallow, hides, furs, wheat, peas, potatoes, honey, bees-wax, myrtle-wax, tobacco, ſnake-root, cotton, ſeveral ſorts of gum and medicinal drugs. The deer-ſkins are bought of the Indians with vermilion, lead, gunpowder, coarſe cloth, iron, and ſprituous liquors. As yet they have not a ſufficient number of handicraftſmen, which renders labour very dear, and a ſupply of cloaths from England neceſſary. The aſpect of the country is very fine, being adorned with beautiful rivers and creeks, and the woods with lofty timber, which afford delightful and pleaſant ſeats for the planters, and renders the fencing their lands very eaſy. They have plenty of fiſh, wild fowl, and veniſon, beſides other neceſſaries which this country produces naturally. The planters and their families that are born here, are troubled with few diſtempers; and are generally tall, well-made, and active. The women who are not expoſed to the weather are remarkable fair and handſome, with fine eyes. They marry at thirteen or fourteen, and where there is no clergyman the ceremony is performed by a juſtice of the peace. They are very fruitful, have eaſy labours, and the children at nine months old are able to run about the houſe. Both ſexes, as well young as old, are very dextrous in paddling and managing the canoes, being bred to it from their infancy. The religion of the planters is that of the church of England; but, as there is liberty of conſcience, here are diſſenters of all ſorts. This country is divided into North and South Carolina, and Georgia, each of which is under a particular Governor. Charles-Town is the capital of the whole country.

* CAROLINE, queen to George II. died of a mortification in her bowels, November 20, 1737, aged 54.

* CAROLINE, princeſs, daughter of Geo. II. died December 28, 1757.

CAROLUS, an Engliſh broad piece of gold, ſtruck under king Charles I. Its value has of late been at twenty-three ſhillings ſterling, though at the time it was coined, it is ſaid to have been rated at twenty ſhillings.

CAROTEEL, in commerce, an uncertain weight or quantity of goods: thus a caroteel of cloves is from four to five hundred weight; of currants, from five to nine; of mace, about three hundred; of nutmegs, from ſix to ſeven hundred and a half.

CAROTIDS, in anatomy, two arteries of the neck, which convey the blood from the aorta to the brain, one called the right carotid, and the other on the left. All the ramifications of the carotids are covered by the pia mater, in the duplicature of which they are diſtributed, and form capillary, reticular textures, in great numbers; afterwards they are loſt in the inner ſubſtance of the brain. See ARTERA.

CARP, in ichthyology, the Engliſh name of the cyprinus, with four cirri, or beards, and the third ray of the back-fins armed with ſmall hooks. The carp is generally taken for the queen of freſh-water fiſh: it is ſubtle, and lives the longeſt of all fiſh, except the eel, out of water. It is obſerved to breed ſeveral months in one year; for which reaſon you hardly ever take either male or female without melt or ſpawn; but they breed more naturally in ponds than in running water, and in the latter very ſeldom. In the places they frequent, their ſtock is inumerable. To make a carp fat and very large, rake all the ſides your pond, when the water is fallen away, about April, and ſow hay ſeeds, the growth of which, when winter comes and overflows it, will feed them, and make them very fat.

CARPENTER, an artificer in wood deſigned for the purpoſes of building houſes, &c.

Ship-CARPENTER, a perſon employed in building or repairing ſhips. See SHIP-BUILDING.

CARPENTRY, the art of cutting, framing, and joining wood for the uſe of building. It is one of the arts ſubſervient to architecture, and is divided into houſe-carpentry and ſhip-carpentry: the firſt is employed in raiſing, roofing, flooring of houſes, &c. and the ſecond in the building of ſhips, &c. The rules in carpentry are much the ſame with thoſe of joinery; the only difference is, that carpentry is uſed in the larger coarſer work, and joinery in the ſmaller and curious. See JOINERY.

CARPET, a ſort of covering of ſtuff, &c. wrought with the needle, or in a loom, forming part of the furniture of a houſe, and is commonly ſpread over tables, or upon the floor. Perſian and Turkey carpets are moſt eſteemed; though at Paris there is a manufactory after the manner of Perſia, where they make them little inferior, not to ſay finer, than the true Perſian carpets. There are alſo carpets of Germany, ſome of which are made of woollen ſtuffs, as ſerges, &c. and called ſquare carpets: others are made of wool alſo, but wrought with the needle, and often embelliſhed with ſilk; and laſtly, there are carpets made of dog's hair. We have likewiſe carpets made in England equal to any brought from the Eaſt.

CARPOBALSAM, in the materia medica, the fruit of the tree which yields the true oriental balſam.

CARPUS, the wriſt, in anatomy. See WRIST.

CARR, among the ancients, a kind of throne mounted on wheels, uſed in triumphs and other ſolemn occaſions.

CARRAC, the name of the veſſels employed by the Portugueſe in the Eaſt-India and Braſilian trade; they are very large, and fitted for fighting, as well as burden.

CARRIAGE, a vehicle ſerving to convey perſons, goods, merchandizes, from one place to another. Water-carriages, in general, are thoſe veſſels which ſerve to carry perſons or merchandize by ſea, rivers, lakes, &c. as ſhips, barks, wherries, barges, lighters, boats, &c.

Land-carriages are machines invented to carry more conveniently perſons or goods. Thoſe moſtly uſed in Europe are coaches, chariots, calaſhes, berlins, waggons with four wheels, chaiſes, carts, and drays with two wheels, all drawn by horſes, mules, buffaloes, oxen, &c. and in Lapland and Siberia, by rein-deer.

CARRIAGE, *of a Cannon*, the frame on which it is mounted, ſerving to point it in ſhooting, or to carry it from one place to another. It is mounted on two wheels; but on a march has two fore-wheels, with limbers added. The principal parts are the cheeks, tranſums, bolts, plates, train, bands, bridge, bed, hooks, trunnion holes, and cap-ſquares.

Block CARRIAGE, a cart made on purpoſe for carrying mortars and their beds from place to place.

Truck CARRIAGE, two ſhort planks of wood ſupported on two axle-trees having four trucks of ſolid wood for carrying mortars or guns upon batteries, where their own carriages cannot go. They are drawn by men.

CARROT, *Daucus*, in botany, a genus of plants.

It hath, for the moſt part, a fleſhy root: the leaves are divided into narrow ſegments: the petals of the flower are very unequal, and ſhaped like an heart; the umbel, when ripe, is hollowed and contracted, appearing ſomewhat like a bird's neſt: the ſeeds are hairy, and in the ſhape of lice.

Carrots are propagated at two or three different ſeaſons, or ſometimes oftener, where people are fond of young carrots through all the ſummer months. The firſt ſeaſon for ſowing the ſeed is ſoon after Chriſtmas, if the weather is open, which ſhould be in warm borders, under walls, pales, or hedges: but they ſhould not be ſown immediately cloſe thereto; but a border of lettuce, or other young ſallad-herbs, of about a foot wide, ſhould be next the wall, for otherwiſe they would run up to ſeed, without making any tolerable roots. They delight in a warm, light, ſandy ſoil, which ſhould be dug pretty deep, that the roots may the better run down; chuſe a calm day to ſow the ſeed, for if the wind blows, it will be impoſſible to ſow it equal; for the ſeeds being very light, will be blown into heaps.

When the plants are come up, you ſhall hoe the ground with a ſmall hoe about three inches wide, cutting down all young weeds, and ſeparating the plants to four inches diſtance each way, that they may get ſtrength; and in about three weeks after, when the weeds begin to grow again, you ſhould hoe the ground over again a ſecond time, and ſeparate the plants to a greater diſtance.

In about three weeks or a month after, you muſt hoe them a third time, and if they are to grow large before they are pulled up, they ſhould be left eight or ten inches diſtant every way.

The ſecond ſeaſon for ſowing the ſeeds is in February, on warm banks ſituated near the ſhelter of a wall, pale, or hedge; but thoſe which are intended for the open large quarters ſhould not be ſown before the beginning of March, nor ſhould you ſow later than the end of the ſame month; for thoſe which are ſown in April or May, will run up to ſeed before the roots have any bulk, eſpecially if the weather ſhould prove hot and dry.

In July you may ſow again for an autumnal crop; and in the end of Auguſt you may ſow ſome to ſtand the winter; by which method you will have early carrots in March, before the ſpring ſowing will be fit to draw; but theſe are ſeldom ſo well taſted, and are often very tough and ſticky. Many people mix ſeveral other ſorts of ſeeds, as leek, onion, parſnip, raddiſh, &c. amongſt their carrots, and other plants beans, &c. but in my opinion, neither of theſe methods are good; for if there is a full crop of any of theſe plants, there can be no room for any thing elſe amongſt them; ſo that what is got by one is loſt by the other: and beſides, it is not only more ſightly, but better, for the plants of each kind to be ſown ſeparate; and alſo by this means your ground will be clear, when the crop is gone, to ſow or plant any thing elſe; but when three or four kinds are mixed together, the ground is ſeldom at liberty before the ſucceeding ſpring: beſides, where beans, or any other tall growing plants, are planted amongſt the carrots, it is apt to make them grow more in top than root: ſo that they will not be half ſo large as if ſown ſingly without any other plants amongſt them. *Miller's Gardener's Dict.*

The Flemings have long fed their cattle with carrots; though it is but of late years that this root has been cultivated for that purpoſe in the fields of England: nor does this uſeful and profitable practice extend even now to more than a few parts of this country; though there is ſcarce any root yet known, which is more heartening food for moſt ſorts of animals, or which better merits the huſbandman's attention; as one acre of carrots, well planted, will fatten a greater number of ſheep, or bullocks, than three acres of turnips, and at the ſame time their fleſh will be firmer, and better taſted. Horſes are extremely fond of this food, and there is not any better for hogs. Theſe roots have alſo been of ſuch excellent ſervice to deer, in parks, that when numbers of theſe valuable creatures have periſhed elſewhere, through want in very hard winters, when there has been an extreme ſcarcity of their uſual food; thoſe that have been fed with carrots have kept their fleſh all the winter, and, upon the growth of the graſs in the ſpring, have been fat early in the ſeaſon. This is not an inconſiderable advantage, in places where the graſs is generally backward in its growth.

This plant has alſo a very great ſuperiority over turnips: namely, that the crop is not ſo liable to fail; for as the carrots are ſown in the ſpring, the plants generally come up well; and unleſs the months of June and July prove very bad, there is no danger of their ſucceeding, whereas turnips are frequently deſtroyed by the fly at their firſt coming up; and in dry autumns they are attacked by the caterpillars, which lay waſte whole fields in a ſhort time. But carrots are not preyed upon by either of theſe vermin. Every farmer who has a ſtock of cattle or ſheep ſhould therefore always have good ſtore of theſe roots. His land will be fit for them, if it be in the proper tilth.

CARROUSAL, a courſe of chariots and horſes, or a magnificent entertainment exhibited by princes on ſome public rejoicing. It conſiſts in a cavalcade of ſeveral gentlemen richly equipped, after the manner of ancient cavaliers, divided into ſquadrons, meeting in ſome publick place, and practiſing juſts, tournaments, &c.

CART, a land-carriage with two wheels, uſually drawn with horſes, to carry heavy goods, &c. from one place to another. Carts, in London and Weſtminſter, are not to carry more than twelve ſacks of meal, or one chaldron of coals, on pain of forfeiting one of the horſes. The wheels are to be of a certain thickneſs, and without iron; and if any perſon ride in a cart, not having another to guide it, he ſhall forfeit ten ſhillings.

CARTEL, an agreement between two ſtates for the exchange of their priſoners of war. See PRISONER *of War.*

CARTHAMUS, baſtard-ſaffron, in botany. It is an annual plant, a native of Egypt, and cultivated in large quantities in ſome parts of Germany, on account of the uſes of its flowers in dying. It is ſometimes raiſed among ourſelves; but the ſeeds, which are the part that has been chiefly made uſe of in medicine, ſeldom come to perfection in this climate.

The ſeeds of Carthamus have been celebrated as a gentle cathartic, in doſes of a dram or two in ſubſtance, and ſix or eight drams in emulſion: but as they operate very ſlowly, and are apt, eſpecially when given in ſubſtance, to occaſion nauſea, flatulencies, and diſtenſions of the ſtomach; their uſe has long been laid aſide, and the colleges, both of London and Edinburgh, have now diſcarded them from their catalogues of officinals.

CARTHUSIANS, a religious order, founded in 1080, by one Bruno. Their rules are very ſevere. They are not to go out of their cells, except to church, without leave of their ſuperior; nor to ſpeak to any perſon without leave. They muſt not keep any portion of their meat or drink till next day: their beds are of ſtraw, covered with a felt; their cloathing two hair-cloths, two cowls, two pair of hoſe, and a cloak, all coarſe. In the refectory they are to keep their eyes on the diſh, their hands on the table, their attention on the reader, and their hearts fixed on God. Women are not allowed to come into their churches.

CARTILAGE, in anatomy, a pearl-coloured ſubſtance, which covers the extremities of bones joined together by moveable articulations, increaſes the volume of ſome of them after the manner of epiphyſes, unites others very cloſely together, and has no immediate adheſion or connexion with others. The ſubſtance of cartilages is more tender, and leſs brittle, than that of bones; but with age they ſometimes grow ſo hard as to become perfectly bony. They are pliable and elaſtic, and capable of reſtoring themſelves after having been compreſſed, or bent to a certain degree; but, when bent beyond that degree, they break.

CARTILAGINOUS, belonging to, or partaking of, the nature of a cartilage.

CARTILAGINOUS *Fiſhes*, thoſe with cartilaginous fins, conſtitute a claſs or order of fiſhes, otherwiſe called chondropterygious. See CHONDROPTERYGIOUS.

CARTON, or CARTOON, in painting, a deſign drawn on ſtrong paper, to be afterwards calked through, and transferred on the freſh plaſter of a wall to be painted in freſco. Carton is alſo uſed for a deſign coloured, for working in moſaic, tapeſtry, &c. The cartons were formerly at Hampton Court, but now at the queen's palace, are deſigns of Raphael Urbin, intended for tapeſtry.

CARTOUCHE, in architecture and ſculpture, an ornament repreſenting a ſcroll of paper. It is uſually a flat member, with wavings, to repreſent ſome inſcription, device, cypher, or ornaments of armoury. They are, in architecture, much the ſame as modillions; only theſe are ſet under the cornice in wainſcotting, and thoſe under the cornice at the eaves of a houſe.

CARTOUCHE, in military affairs, a caſe of wood, about three inches thick at the bottom, girt with marlin, holding about four hundred muſket-balls, beſides ſix or eight balls of iron, of a pound weight, to be fired out of a hobit, for the defence of a paſs, &c.

A cartouche is ſometimes made of a globular form, and filled with a ball of a pound weight: and ſometimes it is made for the guns, being a ball, of half a quarter pound weight, according to the nature of the gun, tied in form of a bunch of grapes, on a tompion of wood, and coated over. Theſe were uſed in the room of partridge ſhot.

CARTOUCHE is alſo uſed to denote the ſame as a cartridge. See CARTRIDGE.

CARTRIDGE, in military affairs, a caſe of paſteboard or parchment, holding the exact charge of a fire-arm. Thoſe for muſkets, carabines, and piſtols, hold both the powder and ball for the charge; and thoſe of cannon and mortars are uſually in caſes of paſteboard or tin; ſometimes of wood, half a foot long, adapted to the caliber of the piece.

CARTRIDGE, in arthitecture. See CARTOUCHE.

CARTRIDGE-BOX, a caſe of wood or turned iron, covered with leather, holding a dozen muſket cartridges. It is wore upon a belt, and hangs a little lower than the right pocket-hole.

CARUI, or CARAWAY, in botany, an umbelliferous plant. It is a native of the northern climates; in this kingdom it is rarely found wild; but commonly cultivated in gardens for culinary and confectionary as well as medicinal purpoſes. It is biennial.

CARVING, cutting in wood. See SCULPTURE.

CARUNCULA, in anatomy, a little piece of fleſh, and applied to ſeveral parts of the body, thus:

CARUNCULA LACRYMALIS, a little eminence ſituated in the larger angle, or canthus of the eye, where there are alſo ſometimes hairs and certain little glands. According to ſome anatomiſts, they help to keep the two puncta open when the eyes are ſhut.

CARUNCULÆ MYRTIFORMES, fleſhy knobs about the ſize of a myrtle-berry, which owe their origin to the breaking of the hymen, and are not to be found in ſubjects in which that membrane exiſts entire. They are two, three, or four in number, and are placed where the hymen was.

CARUNCULÆ PAPILLARES, or MAMILLARES, little protuberances on the inſide of the pelvis of the kidneys. See PELVIS and KIDNEY.

CARUNCLES, in the urethra, proceeding from a gonorrhœa, or an ulceration of the urethra, may be removed by introducing the bougie or wax-candle. See *Medicated* CANDLE.

CARUS, in medicine, a ſudden deprivation of ſenſe and motion, affecting the whole body.

If this carus or ſopor oppreſſes reſpiration to ſo violent a degree, as the patient cannot breathe, without great efforts, as thoſe who ſnore under a deep ſleep, it is called apoplexy; the ſolution of which is generally ſucceeded by a paraphlegy; but a carus is generally followed by a good ſtate of health. It is ſometimes taken for a heavy and profound ſleep; from which it is difficult to be raiſed. This carus differs little from a lethargy. See LETHARGY.

CARYATIDES, or CARIATES, in architecture, a kind of order of columns or pilaſters, under the figure of women, dreſſed in long robes, after the manner of the Carian people, and ſerving inſtead of columns. The Carytiades ſhould always have their legs pretty cloſe to each other, and even acroſs, or one athwart the other; their arms laid flat to their bodies, or to the head; and as little ſpread as poſſible; when they are inſulated, they ſhould never have any great weight to ſupport; and they ought always to appear in characters proper to the place they are uſed in.

CARYOCOSTINUM, in pharmacy, an electuary prepared of cloves, white coſtus, ginger, cummin-ſeeds, &c. much recommended for purging choler, and breaking away obſtructions of cachetic conſtitutions; alſo an excellent purge for ſtrong people.

CARYOPHYLLATA, AVENS, or herb-benet, a roughiſh perennial plant, which grows wild in woods and hedges, and is found in flower greateſt part of the ſummer.

The root of the avens has been employed as a gentle ſtyptic, corroborant, and ſtomachic; and for theſe intentions continues not undeſervedly, of ſome eſteem in foreign countries, though very little regarded among us.

CARYOPHYLLUS, the pink, in botany. See DIANTHUS.

CARYOPHYLLUS AROMATICUS, the clove tree, common in ſeveral iſlands of the Eaſt Indies. The cloves, which are the only part known to us, are properly the cups of the unopened flowers. They are ſaid to be cured by expoſing them to ſmoke, and afterwards drying them in the ſun.

The clove has a ſtrong agreeable ſmell, and a bitteriſh, hot, very pungent taſte: it is one of the hotteſt and moſt acrid of the ſubſtances of the aromatic claſs, and as ſuch is often uſed, not only internally, but as an external ſtimulant. The fruit called antophyllus, has the ſame kind of flavour with the clove itſelf; but being far weaker, in ſmell as well as in taſte, it is very rarely applied to any medicinal purpoſes, and is now ſcarcely ever to be met with in the ſhops.

The clove is remarkably diſpoſed to imbibe humidity; and when robbed of its active parts, by infuſion in menſtrua or diſtillation, and afterwards mixed with freſh cloves, it regains from them a conſiderable ſhare both of taſte and ſmell. The Dutch, through whoſe hands this ſpice is brought to us, have often practiſed this abuſe; which, however, may be eaſily diſcovered; for thoſe cloves which have once loſt their virtue, continue always not only weaker than the reſt, but likewiſe of a much paler colour.

CARYOPHILUS *Ruber*, the clove july-flower, or gilliflower, in botany, is the name of a perennial plant, ſaid to be a native of Italy.

Several varieties of theſe flowers are cultivated in gardens; but the ſort principally uſed in medicine are of a deep crimſon colour, and a pleaſant aromatic ſmell, ſomewhat reſembling that of the clove deſcribed in the preceding article. They are chiefly valued for the fine ſmell, which is readily extracted by infuſion in water, and diſſipated even by light coction. Three pounds of the freſh flowers, clipped from their heels, communicate, by infuſion in a cloſe veſſel for a night, a grateful and moderately ſtrong ſmell, and a deep red colour, to eight or nine pints of water; which, with a proper quantity of fine ſugar, forms a very agreeable ſyrup.

CASCADE, a ſteep fall of water.

CASCANS, in fortification, holes in form of wells, ſerving as entries to galleries to give vent to the enemies mines.

CASCARILLA. See ELEUTHERIA.

CASE, *Caſus*, among grammarians, implies the different inflexions or terminations of nouns, ſerving to expreſs the different relations they bear to each other, and to the things they repreſent. The Engliſh and many other modern languages expreſs the various relations, not by changes in the terminations, as the ancients, but by the appoſition of articles; it is certainly wrong to ſay, that *of a father* is the genitive caſe of *father*, and *to a father* the dative; for *of* and *to* are no part of the word *father*, they are only articles or modifications, which ſhew the different relation of the word *father*.

CASE, among printers, a ſloping frame, divided into ſeveral compartments, containing a number of types or letters of the ſame kind. From theſe compartments the compoſitor takes out each letter as he wants it, to compoſe a page or form. Thus they ſay a caſe of Pica, of Long Primer, of Greek, &c.

CASE-HARDENING, a method of preparing iron, ſo as to render its outer ſurface hard, and capable of reſiſting any edged tool. It is a leſſer degree of ſteel-making.

CASE-SHOT, in the military art, muſket-ball, ſtones, old iron, &c. put into caſes, and ſhot out of great guns.

CASEMENT, or CASEMATE, in architecture, a hollow moulding, which ſome architects make one ſixth of a circle, and others one fourth.

CASERN, in fortification, lodgings built in garriſon-towns, generally near the rampart, for lodging the ſoldiers of the garriſon. There are uſually two beds in each caſern for ſix ſoldiers to lie, who mount the guard alternately; the third part being always on duty.

CASH, in the commercial ſtyle, the ſtock of money which a merchant, trader, or banker, has at his diſpoſal in order to trade.

CASH-BOOK. See BOOK-KEEPING.

CASHEW-NUT, the fruit of the acajou-tree.

CASHIRE, one who is intruſted with the caſh of ſome public company. See CASH and COMPANY.

CASIA, in botany. See OSYRIS.

CASING *of Timber-work*, among builders, the plaiſtering a houſe all over on the outſide with mortar, then ſtriking it while wet by a ruler with the corner of a trowel, to make it reſemble the joints of free-ſtone.

CASK, a veſſel for preſerving liquors of divers kinds, and ſometimes dry goods, as ſugar, &c.

A caſk of ſugar is a barrel of that commodity, containing from eight to eleven hundred weight. A caſk of almonds is about three hundred weight.

A caſk in ſtaves, that of which all the ſtaves are ready prepared, and want only to be joined and hooped. They are often ſhipped thus on board the veſſels deſigned for the American iſlands, becauſe they take leſs room, and can be eaſily made up there.

* CASPIAN SEA, a large lake in Aſia, which is called a ſea, becauſe its waters are ſalt. It is five hundred and ſeventy-ſeven miles long, reckoning ſixty to a degree. The narroweſt part from eaſt to weſt is one hundred miles over, and the broadeſt three hundred and ſixty. All geographers, till very lately, ſuppoſed that ſeveral rivers ran into it on the eaſt ſide, which are now known to fall into the Aral, another vaſt lake, but much more inconſiderable than the Caſpian Sea. However, it receives the Jamba, the Yaic, the Volga, the Kur, and ſeveral other rivers which run from the mountains of Georgia, and the adjacent countries. Theſe are on the north or weſt ſide. On the weſt there are none; for the river is dried up, or loſt in the ſand, and the Sihun and Gihun, ſo often mentioned in the oriental writers, run into the lake Aral. We have therefore no need of a pretended communication between this ſea and the ocean, for accounting why it riſes no higher. The navigation on this ſea is often dangerous, from the boiſterous winds, and the ſhallows near the ſhores. It has great plenty of fiſh, which ſome pretend are better than in the ocean. Long. 49. to 55. E.

* CASSANDRA, in fabulous hiſtory, the daughter of Priam and Hecuba; ſhe was beloved by Apollo, who conſented to give her the ſpirit of prophecy, if ſhe

would conſent to the gratification of his paſſion. Caſſandra ſeemed to accept the propoſal, but had no ſooner obtained that gift, than ſhe laughed at the tempter, and broke her word with him. Apollo revenged himſelf by cauſing no credit to be given to her predictions; for which reaſon, ſhe in vain propheſied the ruin of Troy. Ajax, the ſon of Oileus, having raviſhed her in the temple of Minerva, he was ſtruck with thunder. She fell into the hands of Agamemnon, who loved her to diſtraction: but in vain did ſhe predict that he would be aſſaſſinated in his own country.

CASSIA, *Caryophyllata*, the bark of a tree of the clove kind, from the iſland of Cuba, Jamaica, and other parts of the Weſt-Indies; rolled up in quills, like cinnamon, but ſomewhat thinner, rougher on the outſide, and of a darker ruſty brown colour. This bark is a warm aromatic, nearly of the ſame kind of ſmell and taſte with the clove ſpice, but weaker, and with a little admixture, as it were, of the cinnamon flavour. In diſtillation with water, it yields a very ſmall portion of eſſential oil nearly ſimilar in flavour to oil of cloves, but more pungent than the genuine oil of that ſpice. A bark of the ſame kind is ſometimes brought from the Eaſt-Indies under the name of culitlawan, or culilawan, a Malaccan compound word, of which the Latin *cortex caryophylloides*, or clove bark, is ſaid to be a tranſlation. That diſtinguiſhed in Europe by the name of calilawan, is thicker than the other, and in colour approaches ſomewhat more to cinnamon, but ſcarcely differs in ſmell or taſte.

CASSIA *Fiſtularis*, a hard, woody cylindrical pod of a tree reſembling the walnut, which grows ſpontaneouſly in Egypt and the warmer parts of the Eaſt-Indies, and has been thence introduced into the Weſt.

CASSIA *Lignea*, the bark of a tree of the cinnamon-kind, brought from the Eaſt-Indies; exactly reſembling cinnamon in appearance, but diſtinguiſhable by its breaking ſhort or ſmooth, while cinnamon breaks fibrous or ſhivery, like wood.

This bark reſembles cinnamon in aromatic flavour as well as in external appearance; but differs in being weaker, or containing leſs active matter, and in its abounding with a viſcous mucilaginous ſubſtance. Chewed, it diſſolves as it were in the mouth into a kind of ſlime: powdered and boiled in water, it renders a conſiderable quantity of the fluid thick and glutinous, ſo as to concrete on cooling into the conſiſtence of a jelly. In the form of ſpirituous tincture, or ſpirituous extract, or diſtilled water, or eſſential oil, it appears very like cinnamon. By the ancients it was employed as a ſuccedaneum to cinnamon, of which it was reckoned equivalent to half its own quantity. At preſent it is not unfrequently mixed with that ſpice in the ſhops, but is ſcarcely ever made uſe of under its own name. *Lewis's Hiſtory of the Materia Medica.*

CASSINE, the caſſia-berry-tree, in botany, a genus of plants, which is uſed in South-America in the ſame manner as tea.

* CASSIOPE, in fabulous hiſtory, the wife of Cepheus, king of Ethiopia, and mother of Andromeda. On her boaſting ſhe was more beautiful than the Nereids, thoſe goddeſſes were ſo provoked, that they deſired Neptune to revenge them; on which he ſent into the country of Cepheus, a ſea monſter, which committeddreadful ravages. To put a ſtop to which, Andromeda was expoſed to be devoured by this monſter; but being delivered by Perſeus, he prevailed on Jupiter to place Caſſiope in the heavens, among the conſtellations.

CASSIOPEIA, in aſtronomy, a conſtellation of the northern hemiſphere, ſituated oppoſite to the great bear on the other ſide of the pole. The ſtars of this conſtellation, in Ptolemy's catalogue, are thirteen; in Tycho's twenty-eight; and in Mr. Flamſtead's fifty-ſix. In 1572, a remarkable new ſtar appeared in this conſtellation, ſurpaſſing Sirius or Lyra in brightneſs and magnitude.

CASSITERIA, in the hiſtory of foſſils, a genus of chryſtals, which are of two kinds: the whitiſh pellucid caſſiterion, and the brown caſſiterion; the firſt is a tollerably bright and pellucid chryſtal, and ſeldom ſubject to the common blemiſhes of chryſtal. It is of a perfect and regular form, in the figure of a quadrilateral pyramid; and is found in Devonſhire and Cornwall principally. The brown caſſiterion is like the former in figure: it is of a very ſmooth and gloſſy ſurface; and is alſo found in great plenty in Devonſhire and Cornwall.

CASSOCK, or CASSULA, a kind of robe or gown, wore over the reſt of the habit, particularly by the clergy.

CASSOWARY, in ornithology, a genus of birds, of the order of the gallinæ. There is only one ſpecies of this genus, which is a robuſt, large, and thick bird, meaſuring four feet and an half when it ſtretches out its neck.

CASSMUNAR, in the materia medica, the root of an Eaſt-Indian plant, of which we have no certain account; brought over in irregular ſlices of various forms, ſome cut tranſverſely and others longitudinally.

This root was introduced ſome time ago by Marloe, as a medicine of uncommon efficacy in hyſteric, epileptic, paralytic, and other nervous diſorders. At preſent it is ſometimes employed as a ſtomachic; but its uſe is not yet become ſo general as it ſeems to deſerve. It is an elegant mild aromatic, moderately warm, lightly bitteriſh; in ſmell ſomewhat reſembling ginger.

CASTANEA, the cheſnut-tree, in botany, a genus of trees, of which M. Tournefort has enumerated four, and Mr. Miller five ſpecies.

Theſe trees are propagated by planting them in February, in beds of freſh, undunged earth: the beſt nuts for ſowing are ſuch as are brought from Portugal and Spain, and are commonly ſold in winter for eating, provided they are not kill-dried. Thoſe of the growth of England, are full as good to ſow, for timber or beauty, as any of the foreign nuts, though their fruit are much ſmaller; theſe ſhould be preſerved till the ſeaſon for ſowing, in ſand, where mice, or other vermin, cannot come to them, otherwiſe they will ſoon deſtroy them. Before you ſet them, it will be proper to put them into water, to try their goodneſs, which is known by their ponderoſity; thoſe of them that ſwim upon the ſurface of the water ſhould be rejected, as good for nothing; but ſuch as ſink to the bottom you may be ſure are good. In April theſe nuts will appear above ground; you muſt, therefore, obſerve to keep them clear from weeds, eſpecially while young: in theſe beds they may remain for two years, when you ſhould remove them into a nurſery, at a wider diſtance. The beſt ſeaſon for tranſplanting theſe trees is either in October, or the latter end of February; but October is the beſt ſeaſon: the diſtance they ſhould have in the nurſery, is three feet, row from row, and one foot in the rows. After having remained three or four years in the nurſery, they will be fit for tranſplanting, either in rows, for avenues to a houſe, or in quarters, for wilderneſs plantations; but if you intend them for timber, it is much the better method to ſow them in furrows, as is practiſed for oaks, &c. and let them remain unremoved; for theſe trees are apt to have a downright tap root, which being hurt by tranſplanting, is often a check to their upright growth, and cauſes them to ſhoot out into lateral branches, as is the caſe with the oak, walnut, &c.

CASTELLAN, the name of a dignity or charge in Poland: the caſtellans are ſenators of the kingdom, but ſenators only of the lower claſs, who, in diets, ſit on low ſeats, behind the palatines, or great ſenators. They are a kind of lieutenants of provinces, and command a part of the palatinate under the palatine.

CASTING, in foundery, the running of a metal into a mold, prepared for that purpoſe.

CASTING *of Lead*, the uſing a frame, or mold, covered with ſand, to caſt the lead into ſheets.

CASTING *of Metals, of Letters, Bells, Figures, &c.* See FOUNDERY.

CASTING *in Sand, or Earth*, the running of metals between two frames, or molds, filled with ſand, or earth, wherein the figure that the metal is to take has been impreſſed *en creux*, by means of the pattern.

CASTING, among ſculptors, the taking of caſts of impreſſions, of figures, buſts, metals, leaves, &c.

The method of taking of caſts of figures and buſts, as at preſent practiſed, is moſt generally by uſe of plaſter of Paris, or, in other words, alabaſter calcined by a gentle heat. The advantage of uſing this ſubſtance preferably to others, conſiſts in this, that notwithſtanding a ſlight calcination reduces it to a pulverine ſtate, it becomes again a tenacious and cohering body, by being moiſtened with water, and afterwards ſuffered to dry; by which means either a concave or a convex figure may be given by a proper mold or model to it when wet, and retained by the hardneſs it acquires when dry: and from theſe qualities, it is fitted to the double uſe of making both caſts, and molds for forming thoſe caſts. The plaſter is to be had ready prepared of thoſe who make it their buſineſs to ſell it; and the only care is to ſee that it is genuine. The particular manner of making caſts depends on the form of the ſubject to be taken. Where there are no projecting parts, it is very ſimple and eaſy; as likewiſe where there are ſuch as form only a right or any greater angle with the principal ſurface of the body: but where parts project in leſſer angles, or form a curve inclined towards the principal ſurface of the body, the work is more difficult.

The firſt ſtep to be taken is the forming the mold; which is, indeed, done by much the ſame means as the caſt is afterwards made in it. In order to this, if the original or model be a baſs relief, or any other piece of a flat form, having its ſurface firſt well greaſed, it muſt be placed on a proper table, or other ſuch ſupport, and ſurrounded by a frame, the ſides of which muſt be at ſuch a diſtance from it, as will allow a proper thickneſs for the ſides of the mold. A due quantity of the plaſter, that is, what will be ſufficient to cover and riſe to ſuch a thickneſs as may give ſufficient ſtrength to the mold, as alſo to fill the hollow betwixt the frame and the model, muſt be moiſtened with water, till it be juſt of ſuch conſiſtence as will allow it to be poured upon the model, which ſhould be done as ſoon as poſſible: for it muſt not be delayed after the water is added to the plaſter, which would otherwiſe concrete or ſet, ſo as to become more troubleſome in the working, or unfit to be uſed. The whole muſt then be ſuffered to remain in this condition, till the plaſter has attained its hardneſs; and then the frame being taken away, the preparatory caſt or mold thus formed, may be taken off from the ſubject entire.

Where the model or original ſubject is of a round or erect form, a different method muſt be purſued; and the mold muſt be divided into ſeveral pieces: or if the ſubject conſiſts of detached and projecting parts, it is frequently moſt expedient to caſt ſuch parts ſeparately; and afterwards join them together.

Where the original ſubject or model forms a round, or ſpheroid, or any part of ſuch round or ſpheroid, more than one half the plaſter muſt be uſed without any frame to keep it round the model; and muſt be tempered, with water, to ſuch a conſiſtence, that it may be wrought with the hand like very ſoft paſte: but though it muſt not be ſo fluid as when prepared for flat figured models, it muſt yet be as moiſt as is compatible with its cohering ſufficiently to hold together: and being thus prepared, it muſt be put upon the model, and compreſſed with the hand, or any flat inſtrument, that the parts of it may adapt themſelves, in the moſt perfect manner, to thoſe of the ſubject, as well as be compact with reſpect to themſelves.

When the model is ſo covered to a convenient thickneſs, the whole muſt be left at reſt till the plaſter be ſet and firm, ſo as to bear dividing without falling to pieces, or being liable to be put out of its form by ſlight or violence; and it muſt then be divided into pieces, in order to its being taken off from the model, by cutting it with a knife with a very thin blade; and being divided muſt be cautiouſly taken off, and kept till dry: but it muſt be always carefully obſerved, before the ſeparation of the parts be made, to notch them croſs the joints, or lines of the diviſion, at proper diſtances, that they may with eaſe and certainty be properly conjoined again: which would be much more precarious and troubleſome without ſuch directive marks. The art of properly dividing the moulds, in order to make them ſeparate from the model, conſtitutes the greateſt object of dexterity and ſkill in the art of caſting; and does not admit of rules for the moſt advantageous conduct of it in every caſe. But we ſhall endeavour to explain the principles on which it depends, in ſuch manner, that by a due application of them, all difficulties may at any time be ſurmounted, and an expertneſs, even of manner, acquired by a little practice. With reſpect to the caſe in queſtion, where the ſubject is of a round or ſpheroidal form, it is beſt to divide the mold into three parts, which will then eaſily come off from the model: and the ſame will hold good of a cylinder or any regular curve figure.

The mold being thus formed, and dry, and the parts put together, it muſt be firſt greaſed, and placed in ſuch a poſition that the hollow may lie upwards, and then filled with plaſter, commixt with water, in the ſame proportion and manner as was directed for the caſting the mold: and when the caſt is perfectly ſet, and dry, it muſt be taken out of the mold and repaired, where it is neceſſary; which finiſhes the whole operation.

This is all that is required with reſpect to ſubjects where the ſurfaces have the regularity above-mentioned: but where they form curves, which interſect each other, the conduct of the operation muſt be varied with reſpect to the manner of taking the caſt of the mold from the ſubject or model ; and where there are long projecting parts, ſuch as legs or arms, they ſhould as was obſerved before, be wrought in ſeparate caſts.

In the ſame manner figures, buſts, &c. may be caſt of lead, or any other metal, in the molds of plaſter : only the expence of plaſter, and the tediouſneſs of its becoming ſufficiently dry, when in a very large maſs, to bear the heat of melted metal, render the uſe of clay, compounded with ſome other proper materials, preferable where large ſubjects are in queſtion.

Caſts of medals, or ſuch ſmall pieces as are of a ſimilar form, may be made in plaſter, by the method directed for baſs relievos.

Indeed there is nothing more required than to form a mold by laying them on a proper board ; and having ſurrounded them by a rim made of a piece of a card, or any other paſteboard, to fill the rim with ſoft tempered plaſter of Paris : which mold, when dry, will ſerve for ſeveral caſts. It is nevertheleſs a better method to form the mold of melted ſulphur ; which will produce a ſharper impreſſion in the caſt, and be more durable than thoſe made of plaſter.

The caſts of medals are likewiſe frequently made of ſulphur, which being melted, muſt be treated exactly in the ſame manner as the plaſter.

Caſts may be made likewiſe with iron with very little additional trouble, provided it be prepared in the following manner.

“ Take any iron bar, or piece of a ſimilar form ; and having heated it red-hot, hold it over a veſſel containing water, and touch it very ſlightly with a roll of ſulphur, which will immediately diſſolve it, and make it fall in drops into the water under it. As much iron as may be wanted being thus diſſolved, pour the water out of the veſſel ; and pick out the drops formed by the melted iron from thoſe of the ſulphur, which contain little or no iron, and will be diſtinguiſhable from the other by their colour and weight.”

The iron will, by this means, be rendered ſo fuſible, or eaſy, to be melted, that it will run with leſs heat than will melt lead and may be employed for making caſts of medals, and many other ſuch purpoſes, with great convenience and advantage.

* CASTLEHAVEN, earl of, beheaded for inviting, and even aſſiſting people to commit rapes upon his lady, 1631.

CASTLE-WORK, ſervice or labour done by inferior tenants for the building and upholding of caſtles of defence, towards which ſome gave their perſonal aſſiſtance, and others paid their contributions. This was one of the three neceſſary charges to which all lands among our Saxon anceſtors were expreſsly ſubject.

CASTOR. See BEAVER and CASTOREUM.

* CASTOR and POLLUX, in pagan mythology. Jupiter in the form of a ſwan having an amour with Leda, the wife of Tyndarus, king of Sparta, ſhe brought forth two eggs, each containing twins. From that impregnated by Jupiter proceeded Pollux and Helina, who were both immortal; from the other Caſtor and Clytemneſtra, who were begot by Tyndarus were both mortal. They were all however called by the common name of Tyndaridæ. Theſe two brothers entered into an inviolable friendſhip : they accompanied the other noble youths of Greece in the expedition to Colchis, in ſearch of the golden fleece; but Caſtor being killed, Pollux obtained leave to ſhare his own immortality with his brother, ſo that they are ſaid to live and die alternately every day : for being tranſlated into the ſkies they form the conſtellation Gemini, one of which ſtars riſes as the other ſets. Theſe deities were eſteemed propitious to navigation, for it is ſaid that the Argonauts being endangered by a tempeſt, Orpheus offered vows for the ſafety of the ſhip, when immediately two lambent flames appeared over the heads of Caſtor and Pollux, which appearance was ſucceeded by a calm. In ſucceeding times theſe fires, often ſeen by mariners, were conſidered as a favourable omen ; but when one only was ſeen it was called Helena, and imagined to forebode ſome evil. Caſtor and Pollux were repreſented as two beautiful youths, completely armed, riding on white horſes, with ſtars over their helmets.

CASTOREUM, CASTOR, a liquid ſubſtance found in the inguinal glands of the caſtor or beaver, a four-footed amphibious animal, frequent in ſeveral parts of Europe, and in North-America. The beſt caſtor comes from Ruſſia, in large, round, hard cods ; an inferior ſort, ſmaller and moiſter, from Dantzick ; the worſt of all from New England, in longiſh thin cods. Ruſſia caſtor has a ſtrong ſmell, and a biting bitteriſh nauſeous taſte : the other ſorts are weaker than that of Ruſſia, yet more ungrateful. It is generally looked upon as one of the capital nervine, antiſpaſmodic, and antihyſteric medicines : its virtues have undoubtedly been much exaggerated: but though they are not near ſo great as they have by moſt writers been repreſented, they appear nevertheleſs to be conſiderable. The common doſe is from two or three grains to a ſcruple; though it has been ſometimes taken by drams, and theſe doſes very often repeated.

Caſtor is uſually joined in preſcription with the deobſtruent fetid gums, volatile alkaline ſalts, the volatile oily ſpirits, and other materials of ſimilar intention. The volatile oily ſpirits are well adapted alſo as menſtrua for diſſolving the active matter of the caſtor, at the ſame time that they prove in many caſes excellent additions to its virtue, as particularly in ſome hyſteric diſorders, and the ſeveral ſymptoms which accompany them: in this view, an ounce of Ruſſia caſtor, and half as much aſafœtida, are digeſted about ſix days, in a cloſe veſſel, with a pint of the volatile ſpirit. *Lewis's Materia Medica.*

CASTRATION, in ſurgery, the operation of gelding.

CAT, *Felis*, a well known quadruped, of the order of the feræ, or beaſts of prey See FELIS.

CAT *of the Mountain*, *Catus Pardus*, an animal of the cat-kind, about the ſize of a maſtiff, variegated with longitudinal black ſtreaks on the upper-part of the body, and black ſpots on the under-part.

CATACAUSTICS, or CAUSTICS, in the higher geometry, are curves formed by reflected rays. The cauſtic of the circle is a cycloid, formed by the revolution of a circle along a circle. The cauſtic of the common cycloid, when the rays are parallel to the axis thereof, is alſo a common cycloid, deſcribed by the revolution of a circle upon the ſame baſe. The cauſtic of the logarithmic ſpiral is the ſame curve.

CATACHRESIS, in rhetoric, a trope which borrows the name of one thing to expreſs another.

CATACOMB, a grotto or ſubterraneous place for the interment of the dead. The term is particularly uſed in Italy for a vaſt aſſemblage of ſubterraneous ſepulchres, three leagues from Rome, in the Via Appia, ſuppoſed to be the ſepulchres of the ancients. Others imagine theſe catacombs to be the cells wherein the primitive Chriſtians hid themſelves. Each catacomb is three feet broad, and eight or ten high, running in form of an alley or gallery, and communicating with one another. Some authors ſuppoſe them to have been the puticuli mentioned by Feſtus Pompeius, into which the Romans threw the bodies of their ſlaves, to whom they denied the honours of burying; and Mr. Monro, in the Philoſophical Tranſactions, gives it as his opinion, that the catacombs were the burial-places of the firſt Romans, before the practice of burning the dead was introduced.

CATADROME, an engine like a crane, uſed by builders in raiſing weights.

CATALEPSY, *Catalepſis*, in phyſic, a kind of apoplexy; or a diſeaſe wherein the limbs are eaſily flexible, and continue in whatever poſition they are placed. The natural cauſes which generally bring on the paroxyſms of a catalepſy, are a peccancy of the thick and viſcid humours, and intenſe cold; and the accidental are violent commotions of the mind, grief, terror, joy, fear, and ſadneſs. As to the prognoſtics of a catalepſis, if it is produced by the paſſions of the mind, or profound meditations, it is ſeldom attended with dangerous conſequences: but, on the contrary, when it proceeds from a thick, viſcid, and impure blood, or from a ſuppreſſion of accuſtomed evacuations of blood, it is highly dangerous; for it either terminates in melancholy, or is changed into an epilepſy; or, laſtly, terminates in a violent apoplexy, and kills the patient. Nor is the congelation brought on by extreme cold of leſs danger; ſince, if ſeaſonable relief is not afforded, ſudden death enſues.

CATALLIS CAPTIS NOMINE DISTRICTIONIS, in law, a writ which lies where a houſe is within a borough, for rent iſſuing out of the ſame: and this writ warrants the taking of doors or windows by way of diſtreſs.

CATALOGUE, a liſt or enumeration of the names of ſeveral books, men, or other things, according to a certain order.

CATALOGUE *of Stars*, an enumeration both of the conſtellations and the unformed ſtars, with the number of ſtars in both, and the place of each ſtar. There have been many different catalogus made of the ſtars in different ages and countries, as by Hypparchus of Rhodes, about 120 years before Chriſt; by Ptolemy in Egypt, in the reign of Antoninus Pius, by Ulug Beigh grandſon to Tamerlane, in 1437; by Tycho Brahe, the Dane, William, landgrave of Heſſe, Bayer, and Kepler, in Germany, about the end of the 16th century; by Hevelius in the ſame country for 1660. But the largeſt and moſt complete is the Britiſh catalogue, owing to the labours of Mr. Flamſtead; it contains no leſs than 3000 ſtars, many of which are ſo ſmall, that they cannot be ſeen without the help of teleſcopes; their places are rectified to the year 1689. We have it in the third volume of his Hiſtoria Cœleſtis, wherein, beſides that of Ptolemy, we have alſo the abovementioned catalogues of Ulug Beigh, Tycho, the prince of Heſſe, and Hevelius, together with an account of each of them in the Prolegomena.

CATAMENIA, in medicine. See MENSES.

CATAPHONICS, the ſcience which conſiders the properties of reflected ſounds. See ECHO.

CATAPHRACTI, horſemen armed with the cataphracta, a kind of coat of mail, which covered the ſoldier from head to foot.

CATAPLASM, in pharmacy, an external ſoft kind of medicine of the conſiſtence of thick panada, and prepared of ingredients of different virtues.

CATAPULTA, in antiquity, a military engine contrived for throwing of arrows, darts, and ſtones upon the enemy.

CATARACT, in hydrography, a precipice in the channel of a river, cauſed by rocks, from whence the water falls with a greater noiſe and impetuoſity: ſuch are the cataracts of the Nile, the Danube, Rhine, and the famous one of Niagara, in America.

CATARACT, a diſorder of the humours in the eye by which the pupilla, that ought to appear tranſparent and black, looks opaque, grey, blue, brown, &c. by which viſion is variouſly impeded, or totally deſtroyed.

There is ſcarce any diſorder, the event of which is more uncertain than that of a cataract: medicines will generally have little or no effect when the diſorder is confirmed, or inveterate, almoſt the ſole relief is therefore had from the ſurgeon's hand and inſtruments. See COUCHING *of Cataracts*.

There are however, ſome caſes in this diſorder which ought to be recommended to the care of the phyſician, who by directing a proper regimen and courſe of phyſic, adapted to the patient's habit, age, and other circumſtances, may by the aſſiſtance of nature, remove cataracts beyond expectation

CATARRH, in medicine, a diſtillation or defluxion from the head upon the mouth and aſpera arteria, and through them upon the lungs. The cauſe of this diſorder proceeds from the lymph, or maſs of blood, moſt frequently in the winter time, as it commonly ariſes from a cold. If it is attended with a fever, as it generally is, in ſome degree, it is called a catarrhous fever. The catarrhus ſuffocatius is a violent and ſuffocating cough, excited either by an exceſſive catarrh, or cold; by the rupture of a vomica in the lungs; by a polypus driven from the heart into the pulmonary artery or ſometimes by a ſphaſmodic conſtitution of the nerves, as it happens in ſome hyſteric caſes. Catarrhous diſorders, as well as all other feveriſh indiſpoſitions, are to be treated in a mild and gentle manner; and the patient is to be kept moderately warm, either in bed, or by means of a fire: he is to abſtain from medicines which are too hot, draſtic, and productive of commotions; as alſo from a hot regimen. The diet is to be ſpare, and the drink tepid and wholeſome: the moſt proper is excorticated barley, with ſhavings of hartſhorn, raiſins, and liquoriſh-root. When the efferveſcence is violent, a few grains of nitre may be advantageouſly mixed with the bezoardic powders; and emulſions muſt be plentifully drank: when during this diſorder the fæces are indurated, and the patient coſtive, beſides water-gruel, decoctions of manna, &c. are to be drank; and nothing is more proper than emollient clyſters.

CATASTASIS, in poetry, the third part of the ancient drama, being that wherein the intrigue, or action, ſet forth in the epitaſis, is ſupported and carried on, and heightened, till it be ripe for the unravelling in the cataſtrophe.

CATASTROPHE, in dramatic poetry, the fourth and laſt part in the ancient drama, or that immediately ſucceeding the cataſtaſis: or according to others, the third only; the whole drama being divided into protaſis, epitaſis, and cataſtrophe; or in the terms of Ariſtotle, prologue, epilogue, and exode.

The cataſtrophe clears up every thing, and is nothing elſe but the diſcovery or winding up of the plot. The great art therein is, that the clearing up of all difficulties may appear wonderful, and yet eaſy, ſimple, and natural.

Mr. Dryden thinks a cataſtrophe reſulting from a mere change in ſentiments and reſolutions of a perſon, without any other machinery, may be ſo managed as to be exceeding beautiful. It is a diſpute among the critics, whether the cataſtrophe ſhould always fall out favourably on the ſide of virtue, or not. The reaſons on the negative ſide ſeem the ſtrongeſt, and Ariſtotle prefers a ſhocking cataſtrophe to a happy one.

CATCH, or CATCHES, in mechanics, thoſe parts which lay hold of others by hooking them.

CATECHISM, in the Liturgy of the church of England, an inſtitution to be learned of every perſon before he be brought to be confirmed by the biſhop. The time appointed for catechiſing, are Sundays and holidays. Every parſon, vicar, or curate, are enjoined, upon every Sunday and holiday, to teach and inſtruct the youth, and ignorant perſons of his pariſh, in the catechiſm ſet forth in the Book of Common-Prayer; and that under the penalty of a ſharp reproof for the firſt omiſſion, ſuſpenſion for the ſecond, and excommunication for the third.

CATECHIST, an officer in the primitive Chriſtian church, whoſe buſineſs it was to inſtruct the catechumens in the firſt principles of religion: this office might be performed by an eccleſiaſtic of any order, and it was ſometimes done by the biſhop himſelf.

CATECHUMEN, a candidate for baptiſm, or one who prepares himſelf for receiving it.

The catechumens, in church hiſtory, were the loweſt order of Chriſtians in the primitive church. They had ſome title to the common name of a Chriſtian, being a degree above pagans and heretics: though not conſummated by baptiſm. They were admitted to the ſtate of catechumens by the impoſition of hands and the ſign of the croſs. The children of believing parents were admitted chatechumens as ſoon as they were capable of inſtruction: but at what age thoſe of heathen parents might be admitted is not ſo clear.

CATEGORICAL, whatever partakes of the nature of a category. Thus, categorical anſwers are pertinent and preciſe replies to the facts or objections propoſed. See CATEGORY.

CATEGORY, in logic, a ſeries or order of all the predicates or attributes contained under any genus. The ſchool philoſophers diſtribute all the objects of our thoughts and ideas into certain genera or claſſes, not ſo much, ſay they, to learn what they do not know, as to communicate a diſtinct notion of what they do know, and theſe claſſes the Greeks called categories, and the Latins predicaments.

As the ſeries of categories is entirely arbitrary, ſome philoſophers think all nature may be conſidered under theſe ſeven things; ſpirit, matter, quantity, ſubſtance, figure, motion, and reſt: and others make but two categories, ſubſtance and accident.

CATENARIA, the name of a curve line, formed by a chain or rope, or hanging freely from two points of ſuſpenſion, whether the points be horizontal or not.

CATERPILLAR, *Eruca*, in zoology, the name of the butterfly-claſs of inſects, in their reptile or worm-ſtate. All winged inſects paſs through a reptile ſtate, before they arrive at perfection: this great change from a worm to a fly, or butterfly, was formerly eſteemed a real metamorphoſis of one animal to another; but later diſcoveries have put it beyond all doubt, that the embryo butterfly, with all the lineaments of its parent, is contained within the external caſes, or coverings, of the caterpillar. When the included animal has acquired a ſufficient degree of ſtrength, theſe coverings are thrown off, and it appears in its genuine or moſt perfect form of a fly, or butter-fly. See FLY and BUTTER-FLY.

It is neceſſary, however, before the animal can get rid of theſe coverings, that it paſs through a ſtate of reſt, called by naturaliſts the nymph, or chryſalis-ſtate. See NYMPH.

CAT-HARPINGS, in naval affairs, ropes which draw in the ſhrouds parallel to the yards, that the yards may be more eaſily braced ſharp for a ſide wind.

CATHARTICS, in medicine, remedies which promote evacuation by ſtool. They are what are commonly called purgatives. Cathartics may be divided into two claſſes; 1. The eccoprotic or milder. 2. The draſtic, or rougher. See ECCOPROTIC and DRASTIC.

They are likewiſe divided according as they are ſuppoſed to purge bile, pituita, melancholy, and ſeroſities, into cholagogues, phlemagogues, melanagogues, and hydragogues. See CHOLAGOGUES.

CAT-HEAD, in naval architecture, a large ſquare piece of timber; one end of it is faſtened upon the fore-caſtle, the other end projects without the bow, ſo far as to keep the anchor clear of the ſhip when it is drawing up by a tackle.

CATHEDRAL, a church wherein is a biſhop's ſee or ſeat.

* CATHERINE, queen of Henry V. died the beginning of 1437.

* CATHERINE, Henry the eighth's

firſt wife, died at Kimbolton, in January, 1536, aged 50.

* CATHERINE HOWARD, Henry the eighth's fourth wife, was beheaded on Tower-hill, with Lady Rochford, February 12, 1542.

* CATHERINE PAR, Henry the eighth's fifth wife, died in 1548.

* CATHERINE, wife of Charles the ſecond, died December 21, 1705.

* CATHERINE, (St.) the order of, ſtituted in Ruſſia, in 1768.

CATHETER, in ſurgery, a fiſtulous inſtrument uſually made of ſilver, to be introduced into the bladder, to ſearch for the ſtone, or diſcharge the urine when ſuppreſſed.

This inſtrument cannot be eaſily paſſed in either ſex, but by one that is previouſly acquainted with the anatomical ſtructure of the parts.

CATHETUS, in geometry, a line or radius falling perpendicularly on another line or ſurface : thus the catheti of a right-angled triangle are the two ſides that include the right angle.

CATHETUS *of Incidence*, in catoptrics, a right line drawn from a point of the object, perpendicular to the reflecting line.

CATHETUS *of Reflection*, or *of the Eye*, a right line drawn from the eye, perpendicular to the reflecting line.

CATHETUS *of Obliquation*, a right line drawn perpendicular to the ſpeculum, in the point of incidence or reflection.

CATHETUS, in architecture, a perpendicular line ſuppoſed to paſs through the middle of a cylindrical body, as a baluſter column, &c.

In the Ionic capital, the cathetus is a perpendicular line paſſing through the middle of the eye of the volute.

CATHOLIC, in a general ſenſe, any thing that is univerſal or general.

CATHOLIC CHURCH. The riſe of hereſies induced the primitive Chriſtian church to aſſume to itſelf the appellation of Catholic, being a characteriſtic to diſtinguiſh it from all ſects. The Romiſh church diſtinguiſhes itſelf now by the name of Catholic, in oppoſition to all thoſe who have ſeparated from her communion, and whom ſhe conſiders as only heretics and ſchiſmatics, and herſelf only as the true and Chriſtian church. In the ſtrict ſenſe of the word, there is no Catholic church in being ; that is, no univerſal Chriſtian community.

CATHOLIC KING, a title hereditary to the kings of Spain ever ſince Alphonſus, who having gained ſeveral victories over the Saracens, and re-eſtabliſhed the Chriſtian faith in Spain, was honoured with the title of Catholic.

CATHOLICON, in pharmacy, a ſoft purgative electuary, ſo called, as being ſuppoſed an univerſal purger of all humours.

* CATILINE (LUCIUS) a famous Roman, of a noble family, who having diſſipated his fortune in debauchery, formed the deſign of oppreſſing his country, deſtroying the ſenate, ſeizing the public treaſure, ſetting Rome on fire, and uſurping a ſovereign power ; to effect which, he drew into his plot ſome young men of quality ; whom he prevailed upon to drink human blood as a pledge of their union. His conſpiracy was however diſcovered by the vigilance of Cicero, who was then conſul ; and the particulars made known to Fulvia, who was beloved by one of the conſpirators ; when Cicero, having accuſed and convicted Catiline in full ſenate, he retired, threatening that he would extinguiſh the embarraſſment into which he was thrown, under the ruins of Rome : at length putting himſelf at the head of an army, with ſeveral of the conſpirators, he fought with incredible valour againſt Petreius, lieutenant to Anthony, who was colleague with Cicero in the conſulſhip; but was defeated and killed in battle, ſixty-two years before the Chriſtian æra.

CATLIN, among ſurgeons, a knife for cutting off corrupted parts of the body.

* CATO of Utica, ſo called from the place of his death, was great grandſon to Cato the cenſor. He was educated by his uncle Livius Druſus, and diſcovered in his infancy ſuch courage, that at fourteen years of age he demanded a ſword to kill the tyrant Sylla. Cato adhered to the ſect of the Stoics, from whom he obtained that grandeur of ſoul which he ſhewed on many occaſions. He performed his firſt campaign in the war of the rebellious ſlaves, commanded by Spartacus, ſeventy-three years before the birth of Chriſt, and a ſhort time after had the command of a thouſand foot in Macedonia. At his return he was made quæſtor, and demanded the dignity of tribune to prevent a wicked man from having it. He joined Cicero againſt Catiline, and oppoſed Cæſar in the ſenate. His enemies cauſed him to be ſent to ſeize the iſland of Cyprus, which had been unjuſtly forfeited by Ptolemy, imagining he by this ſtep would loſe his reputation ; but he behaved there with ſuch prudence that they had nothing

to reproach him with. Cato made uſe of all his endeavours to reconcile Cæſar and Pompey, during the civil wars; but not being able to ſucceed, joined with Pompey's party, after the battle of Pharſalia, and the death of Pompey, he retired to Utica, where being informed that he was purſued by Cæſar, he adviſed his friends to fly, and his ſon to make trial of Cæſar's clemency. At length placing himſelf on his bed, he read twice over Plato's treatiſe on the immortality of the Soul, and then ſtabbed himſelf with a poinard, of which he died, forty-five years before the Chriſtian æra, aged forty-eight.

CATOCHE, or CATOCHUS, in medicine, a diſeaſe by which the patient is rendered in an inſtant, as immoveable as a ſtatue, without ſenſe or motion, and continues in the ſame poſture he was in at the moment he was ſeized. The proximate cauſe of this diſeaſe is the immobility of the common ſenſory, from the time of the firſt attack, and therefore is an abſolute reſt of the blood in the brain, of the glands of the brain, and of all its emiſſories. The diſeaſe is generally preceded by obſtinate intermitting fevers; by a dry, lean, melancholy temparament of body; by a retention of the menſes and hæmorrhoids; by ſudden frights; by a profound, conſtant, and fixed meditation on one ſubject. It is often cured by exciting a copious hæmorrhage from the noſe; but the particular method of cure is various, according to the different cauſes: the patient ſhould be excited with things that greatly ſtrike the ſenſes, ſuch as light, noiſe, ſtimulating things, volatile ſalts, pain, friction, continual agitations, by promoting the menſtrual flux, by ſternutatories, and emetics, by bliſters, by iſſues, by ſetons, by a moiſtening diet.

CATOPTRICS, that part of optics treating of reflex viſion, and explains the laws and properties of reflection, chiefly founded upon this truth, that the angle of reflection is always equal to the angle of incidence; and from thence deducing the magnitudes, and ſhapes, and ſituations of the appearances of objects ſeen by the reflection of poliſhed ſurfaces, and particularly plane, ſpherical, conical, and cylindrical ones. See OPTICS.

CATOPTRIC CISTULA, a machine or apparatus, whereby ſmall bodies are repreſented extremely large, and near ones extremely wide and diffuſed through a vaſt ſpace, and other agreeable phænomena, by means of mirrors, diſpoſed by the laws of catoptrics, in the concavity of a kind of cheſt.

Of theſe there are various kinds accommodated to the various intentions of the artificer; ſome multiply objects, ſome deform them, ſome magnify, &c.

CATOPTRIC DIAL, a dial that exhibits objects by reflected rays. See the article REFLECTING DIAL.

CATOPTRIC TELESCOPE, a teleſcope that exhibits objects by reflection. See REFLECTING TELESCOPE.

CATTLE, *Pecora*, an order of quadrupeds. See PECORA.

Black CATTLE, the ſame with the ox-kind. See BOS.

CAVA, or VENA CAVA, in anatomy, a vein ariſing with a large ſinus from the right auricle of the heart. It there ſends out a vein to the heart itſelf, called the coronary vein, and is divided into two trunks, a ſuperior and an inferior; from the ſuperior trunk of the vena cava there ariſe the following veins; the azygos, the bronchial, the mediaſtinal, the ſuperior diaphragmatic, and the ſubcalavians: the inferior trunk of the vena cava is remarkable for the valves, and from this ariſe the diaphragmatic, or inferior phrenic veins, the renal veins, the ſpermatic, the ſacra, and the iliacs. See VEIN.

CAVALIER, in fortification, an elevation of earth, of different ſhapes, uſually ſituated in the gorge of a baſtion bordered with a parapet, and cut into more or leſs embraſures, according to the capacity of the cavalier.

CAVALIER, in the manege, one that underſtands horſes, and is practiſed in the art of riding them.

CAVALRY, a body of ſoldiers that charge on horſeback, and may properly be called the right arm of the army: they are of great ſervice in diſturbing the enemy, by their frequent excurſions, in intercepting convoys, and deſtroying the country. The cavalry is divided into ſquadrons, and encamp on the wings of the army.

CAVAZION, or CAVASION, in architecture, the hollow trench made for laying the foundation of a building, which according to Palladio, ought to be one ſixth part of the height of the whole building.

CAUCALIS, in botany, a genus of plants.

CAUDA DRACONIS, the dragon's-tail, in aſtronomy, the name of the moon's deſcending node. See NODE.

CAUDA LEONIS, in aſtronomy, a ſtar of the firſt magnitude in the tail of the conſtellation Leo. See Leo.

CAVEAR, or CAVEER, or CAVIARY, the ſpawn or hard roes of ſturgeon, made into ſmall cakes, ſalted and dried in the ſun. This ſort of food is in great repute throughout Muſcovy, becauſe of their three Lents, which they keep with a ſuperſtitious exactneſs. There is a pretty large quantity of this commodity conſumed in Italy; and they are very well acquainted with it in England and France, where it is reckoned no deſpicable diſh.

CAVEAT, in law, a kind of proceſs in the ſpiritual courts, to ſtop the proving of a will, the granting letters of adminiſtration, to the prejudice of another, &c. See Probate.

It is alſo uſed to ſtop the inſtitution of a clerk to a benefice.

CAVERNOSE, among anatomiſts, an appellation given to ſeveral parts of the body, on account of their ſpongy ſtructure: thus the cavernoſa corpora of the penis are two ſpongy bodies, made up of a number of ſmall caverns or cells.

CAVETTO, in architecture, a hollow member, or round concave moulding, containing a quadrant of a circle. It is uſed as an ornament in cornices.

CAVEZON, in the manege, a ſort of noſeband, either of iron, leather, or wood, ſometimes flat, and at other times hollow or twiſted, clapped upon the noſe of a horſe, to wring it, and ſo forward the ſupplying and breaking of the horſe.

CAVIN, in the military art, a natural hollow, fit to lodge a large body of troops: if there happen to be any near a place beſieged, it is of great uſe to the beſiegers.

CAUK, or CAWK, a coarſe ſparry ſtone, of a white colour, found in the lead-mines.

CAUL, in anatomy, a membranaceous part of the abdomen, covering the greateſt part of the guts, uſually furniſhed with a large quantity of fat, placed under the peritonæum, and immediately over the inteſtines, called by ſome authors rete, or reticulum, from the number of holes appearing in it, when raiſed, and giving it the reſemblance of a net: but it is moſt frequently called omentum. See Omentum.

CAUL, a little membrane, found on ſome children, encompaſſing the head when born.

CAULICOLES, or CAULICOLI, are eight leſſer branches or ſtalks, in the Corinthian capital, ſpringing out from four greater or principal cauls, or ſtalks.

CAULIFEROUS, an appellation given to ſuch plants as have a perfect caulis, or ſtem. See Caulis.

CAULIFLOWERS, in gardening, are the produce of a kind of cabbage; they are in ſeaſon in the months of May, June, and July, but the ſkill of the gardener can continue them much longer. The manner of propagating them is this:

Having procured ſome good ſeed, you muſt ſow it before the middle of Auguſt, upon an old cucumber or melon-bed, ſifting earth over the ſeeds to a quarter of an inch in thickneſs: if the weather prove very hot and dry, the beds muſt be ſhaded with mats, and be lightly watered at times. In about a week's time the ſeeds will appear above ground, and they muſt be uncovered by degrees, but not expoſed to too much ſun at firſt. In about a month more they ſhould be pricked out on another old bed, at three inches diſtance, and ſhaded and watered, when firſt tranſplanted; but after this they muſt not be much watered, nor be ſuffered to have too much rain, which will make them back-ſhanked, or rotten in the ſtalks. In this bed they are to remain till the middle of October, when they are to be planted out for the winter ſeaſon: they are then to be planted out in rich beds, and thoſe which are to be early ripe, are to be ſhaded with bell-glaſſes, two under each glaſs, and in February to be planted out again: the reſt are to be at firſt ſet at a greater diſtance, and to ſtand.

When the cauliflowers begin to fruit, they muſt be carefully watched, and ſome of the inner leaves muſt be bent down over the flower, to ſhade it from the ſun, which would otherwiſe turn it yellow. The very fineſt of the cauliflowers, which are not looſe and frothy about the edges, and very firm ſhould be ſaved for ſeed; and the flower ſtems, as they ſhoot out, ſupported with ſticks till the ſeeds are ripened, which muſt then be carefully gathered and dried for uſe. *Miller's Gard. Dict.*

CAULIS, among botaniſts, the ſtalk of herbaceous plants: this, in trees, is called *caudex*, or trunk; and in graſſes, *culmus*, or ſtem.

CAULKING, amongſt ſhipwrights, the act of driving a quantity of oakum, i. e.

old ropes untwiſted and ſoftened, into the ſeams of the planks, or between them where they are joined, in order to keep out the water: after the oakum is driven very hard into theſe ſeams, it is covered with hot melted pitch, to prevent the water from rotting it.

CAUSE, *Cauſa*, that from whence any thing proceeds, or by virtue of which any thing is done: it ſtands oppoſed to effect. We get the ideas of cauſe and effect, ſays Mr. Locke, from our obſervation of the viciſſitude of things, while we perceive ſome qualities or ſubſtances begin to exiſt, and that they receive their exiſtence from the due application and operations of other beings. That which produces is the cauſe, and that which is produced the effect: thus fluidity in wax is the effect of a certain degree of heat, which we obſerve to be conſtantly produced by the application of ſuch heat.

Firſt CAUSE, that which acts of itſelf, and of its own proper power or virtue: God is the only firſt cauſe in this ſenſe.

Second CAUSES, are thoſe which derive the power and faculty of action from a firſt cauſe: theſe are improperly called cauſes, as they do not, ſtrictly ſpeaking, act at all, but are acted on: of this kind are all thoſe that we term natural cauſes.

Cauſes are diſtinguiſhed, by the ſchools, into efficient, material, final, and formal.

Efficient CAUSES, the agents employed in the production of any thing.

Material CAUSES, the ſubjects whereon the agents work, or the materials whereof the thing is produced.

Final CAUSES, the motives inducing an agent to act; or the deſign and purpoſe for which the thing was done.

Formal CAUSE, the change reſulting from the action; or that which determines a thing to be this, and diſtinguiſhes it from every thing elſe: thus, the ſoul is held the formal cauſe of man.

Cauſes are again diſtinguiſhed into phyſical and moral.

Phyſical CAUSE, that which produces a ſenſible corporeal effect; as the ſun is the phyſical cauſe of light: others define it, that which produces its effect by a phyſical virtue.

Moral CAUSE, that which produces a real effect, but in things immaterial; as repentance is the cauſe of forgiveneſs. A moral cauſe is alſo defined, that which determines us, though not neceſſarily, to do, or not to do any thing; as advice, intreaties, commands, menances, &c. It is to be obſerved, that in this ſenſe, a moral cauſe is only applicable to a free intelligent agent: it is alſo obſervable, that the latter notion of a phyſical, as well as a moral cauſe, is the moſt juſt, clear, and diſtinct.

Cauſes are again diſtinguiſhed into univerſal, or particular; principal, or inſtrumental; total, or partial; univocal, equivocal, &c.

CAUSE, among civilians. See ACTION.

CAUSEWAY, or CAUSEY, a maſſive body of ſtones, ſtakes, and faſcines; or an elevation of fat viſcous earth, well beaten; ſerving either as a road in wet marſhy places, or as a mole to retain the waters of a pond, or prevent a river from overflowing the lower grounds.

CAUSTICS, in phyſic, medicines of ſo hot and fiery a nature, that being applied, conſume, and, as it were, burn the texture of the parts like hot iron. Cauſtics differ from cauteries, in that they perform their effects ſlower, and with leſs force and pain: they are uſed to eat off proud fungous fleſh; they alſo penetrate within hard callous bodies, and liquify the humours; and are particularly applied in abſceſſes and impoſthumations, to eat through to the ſuppurated matter, and give it vent; ſometimes alſo to make iſſues, in parts where cutting is difficult or inconvenient.

CAUSUS, or BURNING-FEVER, a ſpecies of continual fever, accompanied with a remarkable inflammation of the blood. The principal ſymptoms are a heat almoſt burning to the touch, the breath extremely hot, a dryneſs of the whole ſkin, the tongue parched and rough, and an unquenchable thirſt. See FEVER.

CAUTERIZATION, the application of cauteries to any part of the body. See CAUTERY.

CAUTERY, in ſurgery, a medicine for burning, eating, or corroding any ſolid part of the body.

Cauteries are diſtinguiſhed into two claſſes, actual and potential: by actual cauteries are meant red-hot inſtruments, uſually of iron, which are applied to many parts and diſorders; and by potential cauteries are underſtood certain kinds of corroding medicines.

Cauteries have manifold uſes; for they not only deſtroy the dead parts of carious bones, remove cancers, ſchirrhi, excreſcences, carbuncles, and mortified parts;

but they are alſo uſed to make iſſues and fetons, to ſtop hæmorrhages in wounds and amputations; and laſtly, to remove an amauroſis, epilepſy, ſciatica, with pains in the teeth and other parts. Several phyſicians have obſerved, that cauteries have ſucceeded in apoplexies when all other remedies have failed. But for the part to which the cautery is to be applied, there are various opinions; ſome prefer the occiput; ſome the nape of the neck, between the firſt and ſecond vertebræ; ſome the meeting of the coronal and ſagitial ſutures; and others pitch upon other parts. Miſtichellius, an Italian writer aſſerts, that no part can be ſo proper for cauterization in apoplexies, as the ſoles of the feet.

CAUTING IRON, in farriery, an iron with which farriers cauterize or ſear thoſe parts of an horſe that require burning.

CAUTION, *Cautio*, in the civil and Scotch law, denotes much the ſame with what, in the law of England, is called bail. See Bail.

CAXOU, among miners, denotes a cheſt of any ore ready for refining.

*CAXTON, (Wm.) the firſt printer in England, who introduced that art into London in 1474, died in 1494, aged 82.

CAZEMATE, or CASEMATE, in fortification, a certain retired platform in the flank of a baſtion, for the defence of the moat and face of the oppoſite baſtion.

CAZEMATE is alſo uſed for a well with ſeveral ſubterraneous branches dug in the paſſage of the baſtion, till the miner is heard at work, and air given to the mine.

CECIL (WILLIAM) baron Burleigh, lord high treaſurer of England, in the reign of Elizabeth, was the ſon of Richard Cecil, eſq; maſter of the robes to king Henry VIII. and was born at Bourn, in Lincolnſhire. He was educated at Cambridge, from whence he was removed to Gray's Inn, in order to ſtudy the law; but while he was thus employed, an accident introduced him to the knowledge and favour of his ſovereign. O'Neil, a famous Iriſh chief, coming to court, brought with him two of his chaplains, who were very great bigots, to the faith, and power of the Romiſh pontiff, and Mr. Cecil coming to the palace to ſee his father had a warm diſpute with them in Latin, which was managed with ſuch ſkill and vivacity on the part of Cecil, that the two prieſts finding their deficiency in point of argument, fell into a paſſion. This being reported to the king, he had the curioſity to ſee the young man, and was ſo much taken with his abilities, that he directed his father to find out a place for him; but there being none vacant, the old gentleman aſked the reverſion of the cuſtos brevium, worth two hundred and forty pounds a year, which was readily granted, and a few years after, at the beginning of the reign of Edward VI. it came into his poſſeſſion; this induced Mr. Cecil to puſh his fortune in that road which he had ſo happily entered. In 1547 he was made maſter of the requeſts, the next year he was advanced to the high poſt of ſecretary of ſtate, and in 1551, was knighted and ſworn one of the privy council. However, in the reign of queen Mary, he was obliged to reſign his employments, but was twice choſen knight of the ſhire for the county of Lincoln. In that reign he carried on a private correſpondence with the princeſs Elizabeth, and on her coming to the throne in 1558, was ſworn privy counſellor, and ſecretary of ſtate. In 1561 he was made maſter of the wards; in 1571 created baron of Burleigh, in 1572, knight of the Garter, and the year after, lord high treaſurer. He was remarkable for the prudence and ſteadineſs of his conduct; and though he tranſacted a variety of buſineſs of different kinds, yet every thing ſeems to have been managed with as much attention as if he had nothing elſe in view, agreeable to his own favourite and excellent maxim, "That the ſhorteſt way to do many " things is to do but one thing at a time." This great miniſter died Auguſt 4, 1598. This great ſtateſman wrote ſeveral very excellent treatiſes.

CEDAR, in botany, a large tree which puſhes out branches at the diſtance of ten or twelve feet from the ground. They are large, and at a diſtance from each other. Its leaves are pretty much like thoſe of roſemary. It is an evergreen, and lives very long, but dies as ſoon as its top is cut off. The leaves ſtand upright, and the fruit hangs down; that fruit is a ſmaller one, like that of the pine-tree, except that its rind is thinner, ſmoother, and more open. The ſeed is like that of the cypreſs-tree. There are ſtill ſome cedars on Mount Libanus, but in ſmall number, above and to the eaſt of Biblos and Tripoli. There are none to be ſeen any where elſe on theſe mountains. But it is very probable that there were a great many more formerly, ſince their timber was uſed in ſo many conſiderable works. There are ſome cedars alſo growing in ſeveral parts of Africa, in the iſle of Cyprus, and in that of Crete or Candia. The wood is accounted proof againſt all putrefaction of animal bodies. This wood is alſo ſaid to yield an oil, which is famous for preſerving books and writings; and the wood is thought, by lord Bacon, to continue above a thouſand years ſound.

Baſtard CEDAR, in botany. See THEOBROMA.

White CEDAR, a name given to a ſpecies of cupreſſus. See CUPRESSUS.

CEDRIA, among phyſicians, the gum or reſin which iſſues from the cedar. Its good qualities conſiſt in its being fat, thick, tranſparent, and that, when poured out, it falls by equal drops.

CEILING, in architecture, the upper part or roof of a room, being a lay or covering of plaſter over laths, nailed on the bottom of the joiſts which bear the floor of the upper room, or on joiſts put up for that purpoſe, where there is no upper room; hence called cieling joiſts.

CELANDINE, *Chelidonium*, in botany. See CHELIDONIUM.

CELERITY, in mechanics, the ſwiftneſs of any body in motion. See VELOCITY and MOTION.

CELEUS, in fabulous hiſtory, king of Eleuſis, who giving an hoſpitable reception to Ceres, ſhe in return taught him the art of ſowing corn; and to render his ſon Triptolemus immortal, covered him every night with fire, which Celeus diſcovering, was ſo affrighted that he cried out and revealed himſelf, on which the goddeſs deſtroyed him.

CELESTINS, in church-hiſtory, a religious order of Chriſtians, reformed from the Bernardins by pope Celeſtin V. They riſe two hours after midnight to ſay matins: they eat no fleſh at any time, except when they are ſick: they faſt every Wedneſday and Friday, to the feaſt of the exaltation of the Holy-croſs; and from that feaſt to Eaſter, every day.

CELIAC, or COELIAC PASSION, a ſort of diarrhæa, or flux of the belly, wherein the aliment comes away either crude or chylified, inſtead of excrements.

CELIBACY, the ſtate of unmarried perſons, to which, according to the doctrine or diſcipline of the church of Rome, the clergy are obliged. In the church of England, the marriage of the clergy was generally practiſed to the end of the tenth century, and in a great meaſure to the beginning of the twelfth. That celibacy has no pretence of divine or apoſtolical inſtitution, ſeems no difficult point to prove; whence it is, at firſt, hard to conceive from what motive the court of Rome perſiſted ſo very obſtinately to impoſe this inſtitution of the clergy. But we are to obſerve, that this was a leading ſtep to the execution of the project formed of making the clergy independent of princes, and rendering them a ſeparate body, to be governed by their own laws. In effect, while prieſts had children, it was very difficult to prevent their dependence upon princes, whoſe favours have ſuch an influence on private men; but having no family, they were more at liberty to adhere to the pope.

CELL, *Cella*, a little apartment or chamber, ſuch as thoſe wherein the ancient monks, ſolitaries, and hermits, lived in retirement. The hall wherein the Roman conclave is held, is divided by partitions into divers cells for the ſeveral cardinals to lodge in.

CELLS, little diviſions in honeycombs, which are always regular hexagons. See COMBS.

CELLS, in botany, the hollow places between the partitions in the pods, huſks, and other ſeed-veſſels of plants; according as there is one, two, three, &c. of theſe cells, the veſſel is ſaid to be unilocular, bilocular, trilocular, &c.

CELLS, in anatomy, little bags or bladders where fluids or other matters are lodged, called loculi, cellulæ, &c.

CELLAR, the loweſt room in a houſe, the ceiling of which is level with the ſurface of the ground on which the houſe ſtands, or at moſt but very little higher.

CEMENT, or CÆMENT, in a general ſenſe, any glutinous ſubſtance capable of uniting and keeping things together in cloſe coheſion.

There are many different kinds of cement; thoſe uſed for common purpoſes paſs under the denomination of glue, ſize, paſte, and lutes. See GLUE, SIZE, PASTE, and LUTES.

The cement which has been moſt approved for uniting glaſs, china, or earthen ware, as alſo the parts of metalline bodies, where ſoldering is not expedient, is thus prepared:

“Take two ounces of good glue, and ſteep it for a night in diſtilled vinegar: boil them together the next day; and having beaten a clove of garlic with half an ounce of ox-gall, into a ſoft pulp, ſtrain the juice through a linen cloth, uſing preſſure, and add to it the glue and vinegar, Take then of ſandaric powdered, and turpentine each one dram, and of ſarcocol, and maſtic, powdered, each half a dram; and put them into a bottle with an ounce of highly rectified ſpirit of wine. Stop the bottle; and let the mixture ſtand for three hours in a gentle heat; frequently ſhaking it. Mix this tincture alſo with the glue while hot; and ſtir them well together with a ſtick or tobacco-pipe, till part of the moiſture be evaporated; and then take the compoſition from the fire, and it will be fit for uſe. When this cement is to be applied, it muſt be dipped in vinegar; and then melted in a proper veſſel with a gentle heat; and when ſtones are to be cemented, it is proper to mix with it a little powdered tripoli or chalk; or when glaſs is to be conjoined, powdered glaſs ſhould be ſubſtituted."

For the uniting the parts of broken china or earthen-ware veſſels, as alſo glaſs, where the rendering the joint viſſible is not of conſequence, the following compoſition which is much more eaſily prepared, may be ſubſtituted for the foregoing:

"Take an ounce of Suffolk cheeſe, or any other kind devoid of fat, grate it as ſmall as poſſible, and put it, with an equal weight of quick-lime, into three ounces of ſkimmed milk: mix them thoroughly together, and uſe the compoſition immediately.

Where the broken veſſels are for ſervice only, and the appearance is not to be regarded, the joints may be made equally ſtrong with any other part of the glaſs, by putting a ſlip of thin paper, or linen, ſmeared with this cement over them, after they are well joined together by it. This method will make a great ſaving in the caſe of glaſſes employed for chemical, or other ſimilar operations.

Drying oil with white lead is alſo frequently uſed for cementing china and earthen-ware; but where it is not neceſſary the veſſels ſhould endure heat or moiſture, iſinglaſs glue, with a little tripoli or chalk, is better.

The preparation of common cement for joining alabaſter, marble, porphyry, or other ſtones, is this:

"Take of bees-wax two pounds, and of reſin one pound; mix them, and add one pound and a half of the ſame kind of matter powdered, as the body to be cemented is compoſed of; ſtrewing it into the melted mixture, and ſtirring them well together; and afterwards kneading the maſs in water, that the powder may be thoroughly incorporated with the wax and reſin. The proportion of the powdered matter may be varied, where required, in order to bring the cement nearer to the colour of the body on which it is employed.

This, which forms an extremely ſtrong cement, muſt be heated when applied; as muſt alſo the parts of the ſubject to be cemented together; and care muſt be taken likewiſe that they be thoroughly dry. Where a great quantity of cement is wanted for coarſer uſes, the coal-aſh mortar, or Welſh tarras, as it is called, is the cheapeſt and beſt, and will hold extremely well, not only where it is conſtantly kept wet, or dry; but even where it is ſometimes dry and at others wet; but where it is liable to be expoſed to wet and froſt, it ſhould, at its being laid on, be ſuffered to dry thoroughly before any moiſture have acceſs to it; and, in that caſe, it will likewiſe be a great improvement to temper it with the blood of any beaſt. This mortar, or Welſh tarras, muſt be formed of one part lime, and two parts of well ſifted coal-aſhes; and they muſt be thoroughly mixed by being beaten together: for on the perfect commixture of the ingredients, the goodneſs of the compoſition depends.

Where the cement is to remain continually under water, the true terras is commonly uſed, and will very well anſwer the purpoſe. It may be formed of two parts of lime, and one part of plaſter of Paris; which ſhould be thoroughly well beaten together, and then uſed immediately.

For the fixing ſhells, and other ſuch nice purpoſes, putty is moſt generally uſed; but it may be formed of quick-lime, and drying oil, mixed with an equal quantity of linſeed oil; or, where the drying quicker is not neceſſary, it may be made with lime and crude linſeed oil, without the drying oil.

Reſin, pitch, and brick-duſt, in equal parts, melted together and uſed hot, are much the cheapeſt cement for ſhell-work; and will perform that office very well, provided the bodies they are to conjoin be perfectly dry when they are uſed.

CEMENTATION, or CÆMENTATION, the corroding of metals in a dry form, by means of the fumes of acid ſalts.

It is performed in the following manner. After the copper has been ſeparated as much as poſſible by copelling, a ſtratum of ſalts of about half an inch in thickneſs is ſpread in the bottom of the cement-pot; over this are laid thin plates of gold, then another ſtratum of ſalts, and ſo on alternately till the pot be filled within half an inch of the brim. This being done, the pot is covered up, and encompaſſed with fire, which ſhould be made gradually fiercer and fiercer; and in ſixteen or twenty hours after they have been red-hot, entirely removed, that every thing may cool by degrees. Then the pots are to be opened, the ſalts taken out, and if it is grown too hard, to be ſoftened by a ſprinkling of hot water. The plates of gold muſt be waſhed in hot water, and the water renewed, till it be free from all ſaline taſte; for the ſalts, together with the metal they have corroded, will be contained in the plates of gold. The gold muſt be tried with the touchſtone, or ſome more certain method, to know if it has the degree of fineneſs required; and if it is not pure enough, it muſt be cemented a ſecond time, and, if neceſſary, with ſtronger ſalts.

CEMETERY, *Cæmeterium*, a place conſecrated, or ſet apart, for burying the dead. Se COEMETERY.

CENOTAPH, in antiquity a monument erected in honour of the dead, without containing any of their remains.

CENSER, a ſacred inſtrument made uſe of in the religious rites of the ancients. It was a vaſe, containing incenſe to be uſed in ſacrificing to the gods. Cenſers were likewiſe in uſe among the Jews, as we find in 1 Kings vii. 50. The cenſer is alſo uſed in Romiſh churches.

CENSOR, in Roman antiquity, a magiſtrate, whoſe buſineſs it was to reform the manners, and to value the eſtates of the people. There were two cenſors firſt created in the 311th year of Rome, upon the ſenate's obſerving, that the conſuls were generally too much taken up in military actions, to have leiſure to attend to private affairs. At firſt they were choſen out of the ſenate, but after the Plebeians had got the conſulate open to them, they ſoon arrived at the cenſorſhip.

CENSURE, a judgment which condemns ſome book, perſon, or action, or more particularly a reprimand from a ſuperior. Eccleſiaſtical cenſures are penalties by which, for ſome miſbehaviour, Chriſtians are deprived of the communion of the church, or prohibited to execute the ſacerdotal office.

CENSUS, among the Romans, an authentic declaration, made by the ſeveral ſubjects of the empire, of their reſpective names and places of abode, before proper magiſtrates in the city of Rome, called cenſors, and in the provinces cenſitors, by whom the ſame were regiſtered. This declaration was accompanied with a catalogue, or enumeration, in writing, of all the eſtates, lands, and inheritances they poſſeſſed; their quantity, quality, place, wives, children, tenants, domeſtics, ſlaves, &c.

CENT, properly a hundred, being an abridgement of the word centum; often uſed in commerce, to expreſs the profit or loſs ariſing from the ſale of any commodity; ſo that when we ſay there is 10 per cent. profit, or 10 per cent. loſs, upon any merchandize, it is to be underſtood, that the ſeller has either gained or loſt ten pounds on every hundred pounds of the price, at which he bought that merchandize. Thus we ſay, money is worth 4 or 5 per cent. upon exchange; that is to ſay, it brings 4 or 5 pounds profit for every hundred pounds laid or lent out.

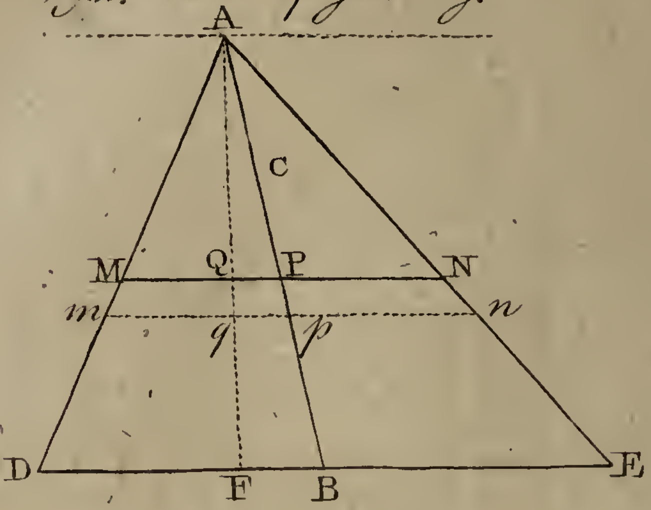
Cent is alſo uſed with regard to the draughts or remittances of money made from one place to another. Thus we ſay, it will coſt $2\frac{1}{2}$ per cent. to remit money to ſuch a city. When we ſay that a broker, or agent, takes one eighth per cent. fee, for the contracts that are made by his means and interpoſition, it is to be underſtood, that there is to be paid to him the eighth part brokerage of a pound, which is 2*s.* 6*d.* for every hundred pound he cauſes to be negociated. The one eighth per cent. is commonly paid by both the contracting parties; that is to ſay, by him who gives, and by him who receives the money.

CENTAUR, or HIPPOCENTAUR, in ancient poetry, a fabulous kind of animal, half man, half horſe. The Theſſalians, who firſt taught the art of breaking horſes, appearing on horſe-back to make only one body with the animal on which they rode, gave riſe to the fiction of the hippocentaur.

CENTAUR, *Centaurus*, in aſtronomy, a conſtellation of the ſouthern hemiſphere commonly joined with the wolf, and called *centaurus cum lupo.* The number of ſtars in this conſtellation in Ptolemy's catalogue are 19; in Tycho's 4; and in the Britannic catalogue 13.

CENTAURIUM *Majus*, great centaury, in botany, a large plant, which is perennial, a native of the ſouthern parts of Europe, and raiſed with us in gardens. It is aperient and corroborant, and ſuppoſed to be particularly uſeful in alvine fluxus;

Fig.2. Center of Gravity.



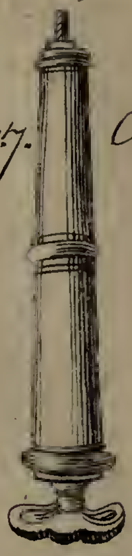
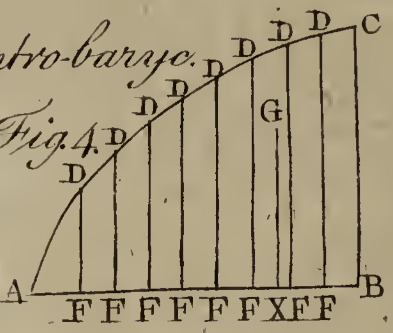


Fig.7. Condenser.

Centro-baryc. Fig.4.



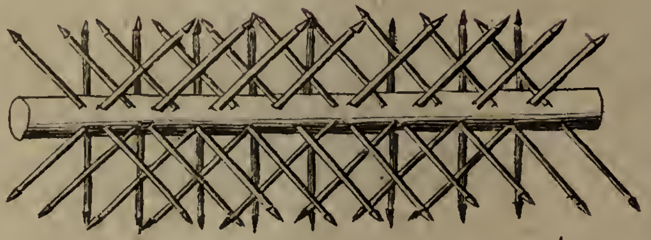


Fig 5. Chevaux de Friese.

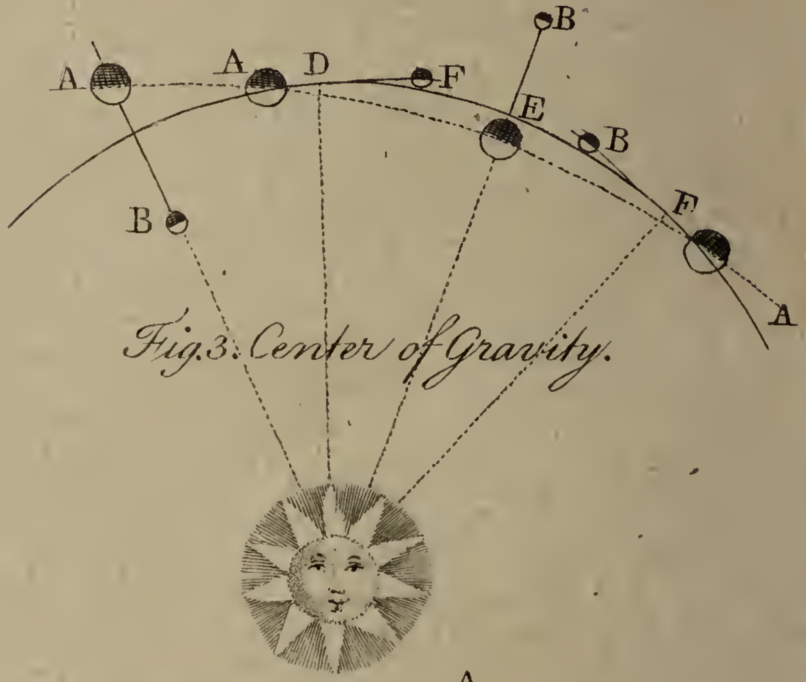
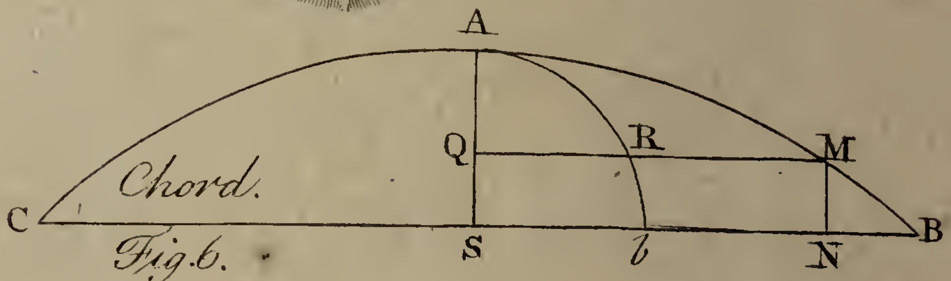


Fig.3. Center of Gravity.



Chord. Fig.6.

but among us it has long ſtood diſcarded, from practice, and is now dropped by the colleges both of London and Edinburgh.

CENTAURIUM *Minus*, leſſer centaury, in botany, a ſmall annual plant, which grows wild in dry paſture grounds, and flowers in July. The leaves and tops of centaury are ſtrong bitters, of ſcarcely any ſmell or particular flavour. The ſeeds alſo are very bitter; the petala of the flowers, and the roots, almoſt inſipid. The flowery tops are generally made choice of, and are of conſiderable eſtimation in the preſent practice as corroborant ſtomachic bitters.

CENTER, or CENTRE, in a general ſenſe, ſignifies a point equally diſtant from the extremities of a line, figure, or body.

CENTER *of Attraction*, in the new aſtronomy, that point towards which the revolving planet or comet is impelled or attracted by the impulſe of gravity.

CENTER *of a Baſtion*, a point in the middle of the gorge of a baſtion, from whence the capital line commences, which is generally at the inner polygon of a figure.

CENTER *of a Battalion*, the middle of a battalion, where there is generally left a ſquare place for holding the cloaths and baggage.

CENTER *of a Circle*, a point within the ſame, from whence all lines drawn to the circumference are equal.

CENTER *of a Conic Section*, the point where all the diameters meet.

CENTER *of a Dial*, that point where a line drawn parallel to the axis of the earth interſects the dial planes.

CENTER *of an Ellipſis*, that point where the tranſverſe and conjugate diameters interſect each other.

CENTER *of Gravity*, that point about which all the parts of a body, in any ſituation, balance each other.

This center of gravity in bodies is of the greateſt conſequence to be well underſtood, as being the ſole principle of all mechanical motions. The particular properties hereof are as follow: 1. If a body be ſuſpended by this point, as the center of motion, it will remain at reſt in any poſition indifferently. 2. If a body be ſuſpended in any other point, it can reſt only in two poſitions, viz. when the ſaid center of gravity is exactly above or below the ſaid point of ſuſpenſion. 3. When the center of gravity is ſupported, the whole body is kept from falling. 4. Becauſe this point has a conſtant endeavour to deſcend to the center of the earth; therefore, 5. When this point is at liberty to deſcend, the whole body muſt alſo deſcend or fall, either by ſliding, rolling or tumbling down. 6. The center of gravity in regular, uniform, and homogenial bodies, as ſquares, circles, ſpheres, &c. is the middle point in a line connecting any two oppoſite points or angles. 7. In a triangle it is in a line drawn from any angle biſecting the oppoſite ſide, one third of the length diſtant from that ſide or baſe. 8. In human bodies, the center of gravity is ſituated in that part which is called the pelvis, or in the middle, between the hips.

Hence the ſolution of ſeveral very curious phænomena will be evident with the leaſt attention, as why ſome bodies ſtand more firmly on their baſes than others; why ſome ſtand firmly in an inclined poſition; why ſome bodies fall in one manner, ſome in another; why ſome may ſeem to riſe while the center of gravity really deſcends, as the rolling cone and cylinder. Hence the form of that particular bucket which deſcends empty with the mouth downwards, but is drawn up full with the mouth upwards. Hence alſo it appears that a waggon loaded with heavy matter, as iron, ſtone, &c. will go ſafely on the ſide of a hill, or riſing ground, where a load of hay or corn would be overturned. Again, we hence ſee the reaſon why no man ſtanding ſtill can move or ſtir, without firſt moving the center of gravity out of its place: alſo, why we ſtand firmly, while the center of gravity falls between or on the baſe line of the feet; and how neceſſarily we fall when the center of gravity falls on one ſide or other of the ſame; with many other particulars which reſult from this principle.

Problem. To find the center of gravity of a plane figure. Let A B be the axis, and M N (pl. XII. *fig.* 1.) an ordinate to it, and let *m n* be another infinitely near M N; ſuppoſe C the required place of the center of gravity. Now if the infinitely ſmall parts, as M *m n* N of the figure be conceived as ſo many weights appended to the axis A B at the ſeveral points P, *p*, &c. and the point of ſuſpenſion, be in A, the vertex of the figure, the diſtance of the center of gravity C from A, the point of ſuſpenſion, will be equal to the quotient of the diviſion of the ſum of the momenta of all the ſaid infinitely ſmall parts or weights M *m n* N, by the ſum of all thoſe little parts or weights; that is, by the area of the whole figure.

Therefore calling A P, x, M P, y, P p, x, the infinitely ſmall part or weight M m n N will be $= 2\,y\,x$, and the ſum of them equal to the fluent of $2\,y\,x$. Again, the momentum of one of thoſe infinitely ſmall parts or weights will be $2\,y\,x$, multiplied by A P $(x) = 2\,y\,x\,x$. The fluent of which, divided by the fluent of $2\,y\,x$, will be equal to A C, the diſtance of the center of gravity from A, the vertex of the figure.

The common center of gravity of the ſun and planets may be eaſily found by comparing their quantity of matter and diſtances, thus; let A B C (plate XV. *fig.* 3.) repreſent the ſun's body, and S its center. Now ſince the bulks and diſtances, of the four firſt planets, Mercury, Venus, the earth, and Mars, are very inconſiderable in regard of the ſun, they would not, if placed in the right line C G, remove the common center of gravity between the ſun and themſelves far from the center of the ſun, ſuppoſe to L. But when we come to Jupiter, his bulk and diſtance give him a conſiderable momentum, which will, if placed in the ſame line C G, remove the center of gravity from L to I, a point without the ſurface of the ſun's body. Laſtly, if we conſider Saturn placed in the line C G with all the reſt, though his quantity of matter falls ſhort of, yet his diſtance far exceeds that of Jupiter, and therefore his momentum will be conſiderable enough to bring the common center of gravity from I to K, at ſuch a diſtance C K from the ſun's ſurface as is equal to $\frac{8}{10}$ of the ſun's ſemi-diameter S C: or S C : C K : : 10 : 8. Now it is this point K, which is the fixed and immoveable center of the ſyſtem, about which the ſun, as well as all the planets, continually move. But the ſun being always very near it, and its diſtance therefrom varying with the different poſitions of the planets, the motion of the ſun about the common center K will be very irregular and unequal, while that of the planets on account of their great diſtance, may be eſteemed nearly uniform and circular.

CENTER *of Magnitude*, that point which is equally diſtant from all the external parts of the body.

CENTER *of Motion*, that point which remains at reſt, while all the other parts of the body move about it.

CENTER *of Oſcillation.* See OSCILLATION.

CENTER *of Percuſſion.* See PERCUSSION.

CENTER *of a Paralellogram*, or *Polygon*, the point in which its diagonals interſect.

CENTER *of a Sphere*, a point in the middle, from which all lines drawn to the ſurface are equal.

CENTESIMATION, a milder kind of military puniſhment, in caſes of deſertion, mutiny, and the like, when only every hundredth man is executed.

CENTIPES, in zoology, the ſame with the ſcolopendra. See SCOLOPENDRA.

CENTNER, among metallurgiſts and aſſayers, a weight diviſible firſt into an hundred, and afterwards into other leſſer parts. However, it is to be obſerved, that the centner of metallurgiſts, is the ſame with the common hundred weight; whereas that of aſſayers is no more than one dram, to which the other parts are proportional, and nevertheleſs paſs by the names 100 lb. 64 lb. &c.

CENTRAL, relating to a center.

CENTRAL RULE, a rule diſcovered by Mr. Thomas Baker, to find the center of a circle deſigned to cut the parabola in as many points as an equation to be conſtructed hath real roots. Its principal uſe is in the conſtruction of equations, and he has applied it with good ſucceſs as far as biquadratics. The central rule is chiefly founded on this property of the parabola, that if a line be inſcribed in that curve perpendicular to any diameter, a rectangle formed of the ſegments of the inſcript, is equal to the rectangle of the intercepted diameter and parameter of the axis.

CENTRIFUGAL FORCE, that force by which all bodies that move round any other body in a curve, endeavour to fly off in every point of the curve.

CENTRIFUGAL MACHINE, a curious machine, invented by Mr. Erſkine, for raiſing water by means of a centrifugal force, combined with the preſſure of the atmoſphere. It conſiſts of a large tube of copper, &c. in the form of a croſs, which is placed perpendicular in the water, and reſts at the bottom on a pivot. At the upper part of the tube is a horizontal cog wheel, which touches the cogs of another in a vertical poſition; ſo that by the help of a double winch, the whole machine is moved round with very great velocity.

Near the bottom of the perpendicular part of the tube is a valve opening upwards; and near the two extremities, but on the contrary ſides of the arms, or croſs part of the tube, are two valves opening outwards. Theſe two valves are by the aſſiſtance of ſprings kept ſhut till the machine is put in motion, when the centrifugal velocity of the water forces them open, and diſcharges itſelf into a ciſtern or reſervoir placed there for that purpoſe. On the upper part of the arms are two holes, which are cloſed by pieces ſcrewing into the metal of the tube. Before the machine can work, theſe holes muſt be opened, and water poured in through them, till the whole tube be full: by this means all the air will be forced out of the machine, and the water ſupported in the tube by means of the valve at the bottom. The tube being thus filled with water, and the holes cloſed by their ſcrew-caps, it is turned round by means of the winch, whence the water in the arms of the tube acquires a centrifugal force, opens the valves near the extremities of the arms, and flies out with a velocity nearly equal to that of the extremities of the ſaid arms.

CENTRIPETAL FORCE, that by which a body is every way impelled, or any-how tends towards ſome point, as a center; among which may be reckoned gravity, whereby bodies tend towards the center of the earth; the magnetical attraction whereby it draws iron; and that force, whatever it it be, whereby the planets are continually drawn back from right-lined motions, and made to move in curves. The centripetal and centrifugal force of the ſame revolving body, in the ſame point of the curve that it deſcribes, are always equal and contrary.

CENTRO-BARYC, in mechanics, a method invented by P. Guldinus for determining the content of a ſuperficies, or ſolid, by means of the center of gravity, of which the following is a general inveſtigation.

Theorem I. Let G (pl. XII, *fig.* 4.) be the center of gravity of the ſpace ABC, contained by the right-lines AB, BC, comprehending a right angle, and the curve-line ADC of any kind whatſoever: from G, draw GX parallel to BC. Now if we conceive the ſaid ſpace to be divided into an infinite number of equal parts, by the lines FD, FD, FD, &c. drawn parallel to BC; then will the ſum of the ſegments AFD, AFD, &c. be equal to the whole figure ABCDA, multiplied by XB.

Demonſtration. Put n for the number of equal parts into which AB is divided, at the points FFF, &c. z the ſum of the ordinates FD, FD, FD, &c. or area of the whole ſpace, and let the parts AFD, FD, FD, &c. wherein the ſmall letters a, b, c, d, e, &c. are placed, be repreſented by thoſe letters, then BX, the diſtance of the center of gravity, from the point of ſuſpenſion B, will, by the principles of mechanics, be expreſſed by

$$\frac{n\,a+\overline{n-1}+b+\overline{n-2}\times c+\overline{n-3}\times d,}{\underline{\text{\&c. - - - }n}}\text{; but}$$

$$a+b+c+d,\ \text{\&c. - - - }\overset{z}{u}=ABC$$
$$a+b\times c+d,\ \text{\&c. - - - }n-1=AFD$$
$$a+b+c+d,\ \text{\&c. - - - }n-2=AFD.$$

Whence the ſum of the infinite number of ſegments is equal to $n\,a+\overline{n-1}\times b+\overline{n-2}\times c+\overline{n-3}\times d$, &c. continued ſtill the number of terms is n, and is evidently equal to the above value of BX, multiplied by Z. *Q. E. D.*

CENTRONIA, in zoology, the name by which Dr. Hill calls the *echinus marinus*, or ſea hedge-hog, or ſea-egg; which he defines to be an animal living under the defence of a ſhelly covering, formed of one piece, and furniſhed with a vaſt number of ſpines, moveable at the animal's pleaſure. The ſpecies of this animal are very numerous, and ſome of them extremely elegant.

CENTRUM TENDINOSUM, in anatomy, a point wherein the tendons of the muſcles of the diaphragm meet.

CENTRY-BOX, a wooden cell, or lodge, to ſhelter the centinel, or centry, from the injuries of the weather.

CENTURION, among the Romans, an officer in the infantry, who commanded a century, or an hundred men.

The centurion Primipilus was the chief of the centurions: he was not under the command of any tribune, as all the reſt were; he had four centuries under his direction, and guarded the ſtandard and the eagle of the legion.

CENTURY, any thing divided into or conſiſting of an hundred parts.

The Roman people when they were aſſembled for the electing of magiſtrates, enacting of laws, or deliberating upon any public affair, were always divided into centuries; and voted by centuries, in order that their ſuffrages might be the more eaſily collected; whence theſe aſſemblies are called comitia centuriata. The Roman cohorts were alſo divided into centuries. See COHORT.

CENTURY, in chronology, the ſpace of one hundred years.

CENTUSSIS, in Roman antiquity, a coin containing an hundred aſſes.

* CEODWALLA, king of Weſſex, ſubdued the kingdom of Suſſex, and annexed it to his dominions, in 686.

CEPHALIC, in a general ſenſe, any thing belonging to the head, or its parts.

CEPHALIC MEDICINES, remedies for the diſorders of the head.

Under this denomination are comprehended all thoſe medicines which have a particular relation to the brain; ſo that cephalic remedies, in general, are ſuch as promote the ſecretion and diſtribution of the ſpirits, and are commonly of a volatile, ſpirituous, and aromatic nature.

CEPHALIC VEIN, in anatomy, creeps along the arm between the ſkin and the muſcles, and divides it into two branches; the external goes down to the wriſt, where it joins the baſilica, and turns up to the back of the hand; the internal branch, together with a ſmall one of the baſilica, makes the mediana.

CEPHALOPHARYNGÆI, in anatomy, the firſt pair of muſcles of the upper part of the gullet, which proceed from beſide the head and neck, and are ſpread more largely upon the tunic of the gullet.

CEPHEUS, in aſtronomy, a conſtellation of the northern hemiſphere, whoſe ſtars, in Ptolemy's catalogue, are thirteen; in Tycho's, eleven; in Hevelius's, forty; and in Flamſtead's, thirty-five.

CEPI CORPUS, in law, a return made by the ſheriff, that upon a capias, or other like proceſs, he has taken the defendant's body.

CERASTES, the horned ſnake, in zoology. It has two protuberances on its forehead, hard as a ſhell, from which it has its name.

CERASTUS, the cherry-tree, in botany, the name of a well-known genus of trees.

The ſeveral ſorts of cherry-trees are propagated by budding or grafting the ſeveral kinds into ſtocks of the black or wild red cherries, which are ſtrong ſhooters, and of a longer duration than any of the garden kinds. The ſtones of theſe two ſorts are ſown in a bed of light ſandy earth in autumn, and the young ſtocks produced from them are to remain where they are ſown till the ſecond autumn; when in October they ſhould be planted out into a rich earth, at three feet diſtance from row to row, and at about ten inches diſtant in the rows. The ſecond year after the planting out, they will be fit to bud, if they are intended for dwarfs; but if they are deſigned for ſtandards, they will not be tall enough till the fourth year; for they ſhould be budded or grafted ſix feet from the ground.

The grafting is uſually performed in ſummer, and the head of the ſtock is to be cut off in the beginning of March following, about ſix inches above the bud; and if the bud has ſhot well, and there be any fear of its being diſplaced by the winds, it muſt be gently tied up to the part of the ſtock left above it. The following autumn theſe trees will be fit to be removed and ſet where they are to remain, or they may be left two years. Many when they plant theſe trees in their places, lop off a great part of their heads; but this is an injury that often kills them: and when they eſcape, they ſeldom get well over it in leſs than four or five years. If the trees are intended for walls, it is adviſeable to plant dwarfs between the ſtandards, that theſe may cover the lower part of the wall, while the others ſpread over the upper part; and when the dwarfs riſe to fill the whole walls, the ſtandards ſhould be taken entirely away. When theſe trees are removed from the nurſery, the dead fibres of the roots muſt be carefully taken off, and the upper part of the ſtock which is above the mud, muſt be cut off cloſe down to the back-part of it: the bud muſt be placed directly from the wall.

Cherry-trees thrive beſt in a dry hazly loam: in a gravelly ſoil they are very ſubject to blights, and ſeldom ſtand long good. They ſhould be placed at fourteen feet aſunder, with a ſtandard-tree between each two.

In pruning theſe trees their ſhoots ſhould never be ſhortened, for they moſtly produce their fruit from their extreme parts. All the fore-right ſhoots are to be diſplaced, and the others trained horizontally; and where there is a vacancy in the wall, the branches being ſhortened, will throw up a ſhoot or two to fill it. *Miller's Gard. Dict.*

CERATE, in pharmacy, one of the ſorts of topical medicines, ſofter than a plaſter, and harder than an ointment. The word is formed from the Latin, *ceratum*, wax, becauſe wax is a principal ingredient in all compoſitions of this kind.

CERATOGLOSSUM, in anatomy, the name of a pair of muſcles, ſerving to draw the tongue directly into the mouth; but if only one of them acts, it draws the tongue to one ſide of the mouth.

CERBERUS, the name of a dog, with three heads, whom the poets made to be the porter of the infernal regions.

CEREALIA, in antiquity, the ſacred rites of the goddeſs Ceres, inſtituted by Triptolemus. They were performed in ſo ſtrictly religious a manner, that it was thought ſufficient to pollute them, if any one at that time ſhould lie with his wife. They made uſe of no wine in the ſacrifices of Ceres; whence Plautus ſays, that Megedorus had made a marriage ſupper for Ceres, becauſe he had provided no wine for the gueſts. The ſolemnity of the cerealia paſſed from the Greeks to the Romans.

CEREMONIAL, belonging to or partaking of the nature of ceremonies: thus we ſay the ceremonial law, the ceremonial of princes, &c.

CEREMONY, *Ceremonia*, an aſſemblage of ſeveral actions, forms, and circumſtances, ſerving to render a thing more magnificent and ſolemn; particularly uſed to denote the external rites of religious worſhip, the formalities of introducing ambaſſadors to audiences, &c.

Maſter of the CEREMONIES, an officer inſtituted by king James I. for the honourable reception of ambaſſadors and ſtrangers of quality; he wears about his neck a chain of gold, with a medal having on one ſide an emblem of peace, with this motto, BEATI PACIFICI; and on the other, an emblem of war, with DIEU ET MON DROIT.

Aſſiſtant Maſter of the CEREMONIES, is to execute the employment in all points whenſoever the maſter of the ceremonies is abſent.

Marſhall of the CEREMONIES, is their officer, being ſubordinate to them both.

* CERES, in Pagan mythology, the goddeſs of the harveſt. She, it is ſaid, firſt taught men to plow and ſow, to reap and houſe their corn, to make bread, and to cultivate gardens. She was the daughter of Saturn and Rhea, and in her youth was ſo beautiful, that her brother Jupiter fell in love with her, by whom ſhe had Proſerpine. Her next amour was with Neptune, by whom ſome ſay, ſhe had a daughter named Hiera, and others, the horſe Arion; however, ſhe was ſo aſhamed of this laſt affair, that ſhe cloathed herſelf in mourning, and retired to a cave, where ſhe continued till the world was in danger of periſhing for want. But her retreat being diſcovered by Pan; Jupiter, at the interceſſion of the Fates, appeaſed her; and reſtored her to the world. While ſhe was in Sicily, her daughter Proſerpine was raviſhed by Pluto; when the diſconſolate mother carried her complaints to Jupiter; but obtaining little ſatisfaction, ſhe lighted her torches at Mount Ætna, and mounting her car, ſet out in ſearch of her daughter, in which ſearch ſhe met with various adventures; particularly in Lycia, where, being thirſty, and deſirous of drinking at a ſpring, the clowns of the country, mudded the water, on which the incenſed goddeſs transformed them into frogs.

Ceres had ſeveral names; ſhe was called Magna Dea, or the Great Goddeſs, from her bounty in ſupporting mankind; Alma Altrix, from her impregnating all ſeeds and vegetables; Euchæa, from her verdure; Melaina, from her black cloathing.

She was uſually repreſented of a tall majeſtic ſtature, with a fair complexion, languiſhing eyes, and yellow or flaxen hair. Her head was crowned with poppies, or ears of corn, her right hand filled with the ſame materials; in her left ſhe held a lighted torch, and her breaſts were repreſented full and ſwelling. When ſeen in a car or chariot, ſhe is drawn by dragons. Mythologiſts have given very different accounts of the origin of this goddeſs; ſome ſuppoſe her to be the earth, the nurſe of mankind, and imagine Proſerpine to be the corn, which lies long concealed before it ſprouts forth.

Cicero ſpeaks of a temple of Ceres at Catanea in Sicily, where was a very ancient ſtatue of that goddeſs, but entirely concealed from the ſight of men, every thing being performed by matrons and virgins.

CERINTHE, honey-wort, in botany, a genus of plants.

CERTIFICATE, in law, a writing made in any court, to give notice to another court of any thing done therein. The clerks of the crown, aſſize, and the peace, are to make certificates into the King's-Bench, of the tenor of all indictments, convictions, outlawries, &c.

CERTIFICATION *of Aſſize of novel Diſſeiſin*, a writ granted for the re-examining paſſed-by aſſizes before juſtices. This writ is uſed where a perſon appears, by his bailiff, to an aſſize brought by another, and has loſt the day.

CERTIORARI, a writ which iſſues out of the Chancery, directed to an inferior court, to call up the records of a cauſe there depending, in order that juſtice may be done: And this writ is obtained upon complaint that the party who ſeeks it has received hard uſage, or is not like to have an impartial trial in the inferior court.

A certiorari is made returnable either in the King's-Bench, Common-Pleas, or in Chancery. It is not only iſſued out of the court of Chancery, but likewiſe out of the King's-Bench, in which laſt-mentioned court it lies where the king would be certified of a record. Indictments from inferior courts, and proceedings of the quarter-ſeſſions of the peace, may alſo be removed into the King's-Bench by a certiorari; and here the very record muſt be returned, and not a tranſcript of it; though uſually in Chancery, if a certiorari be returnable there, it removes only a tenor of the record.

CERTITUDE, conſidered in the things or ideas which are the objects of our underſtanding, is a neceſſary agreement or diſagreement of one part of our knowledge with another; as applied to the mind, it is the perception of ſuch agreement or diſagreement, or ſuch a firm well-grounded aſſent as excludes not only all manner of doubt, but all conceivable poſſibility of a miſtake. There are three ſorts of certitude, or aſſurance, according to the different natures and circumſtances of things.

1. A phyſical or natural certitude, which depends upon the evidence of ſenſe; as, that I ſee ſuch or ſuch a colour, or hear ſuch or ſuch a ſound: nobody queſtions the truth of this, where the organs, the medium, and the object are rightly diſpoſed. 2. Mathematical certitude is that ariſing from mathematical evidence; ſuch as, that the three angles of a triangle are equal to two right ones. 3. Moral certitude is that founded on moral evidence, and is frequently equivalent to a mathematical one; as, that there was formerly ſuch an emperor as Julius Cæſar, becauſe the hiſtorians of thoſe times have recorded it, and no man has ever diſproved it ſince. This affords a moral certitude, in common ſenſe ſo great, that one would be thought a fool or a madman for denying it.

* CERVANTES SAAVEDRA (MIGUEL DE) a celebrated Spaniſh writer, born at Seville in 1549. It is ſaid he ſerved as a common ſoldier at the famous battle of Lepanto, where he diſcovered great valour, but had the misfortune to looſe his left-hand. He however at length enjoyed the poſt of ſecretary to the duke of Alba: when living at Madrid he obſerved that the duke of Lerma, prime miniſter to Philip III. and others of the Spaniſh nobility were infatuated with notions of chivalry, on which he compoſed his romance of Don Quixote, a work which has immortalized his name: in this romance he ridiculed in a very ingenious, delicate, and inſtructive manner, the duke of Lerma, and thoſe of his nation who were fond of knight-errantry. He wrote other works, and died in 1616.

CERVICAL NERVES, in anatomy, are eight pair of nerves, ſo called as having their origin in the neck. See Nerve. From theſe eight pair there are innumerable branches diſtributed through the muſcles of the head, the neck, the ſcapula, and the humerus.

CERVICAL VESSELS, in anatomy, the arteries, veins, &c. which paſs through the vertebræ, and muſcles of the neck, up to the ſcull.

CERVICALES DESCENDENTES, a pair of muſcles, antagoniſts to the ſacro-lumbares, coming from the third, fourth, fifth, and ſixth vertebræ of the neck.

CERVIX, in anatomy, denotes the hinder part of the neck, as contradiſtinguiſhed from the fore-part, called *jugulum*, or the throat. See Neck.

CERVIX *of the Uterus*, or the neck of the uterus, that oblong canal or paſſage between the internal and external orifices of the womb, whence it is alſo called vagina. See Uterus and Vagina.

CERUMEN, ear-wax, or that natural excrement collected in the meatus auditorius, and diſcharged from the glands of thoſe parts through the membrane which lines them. It is fluid on its firſt diſcharge, but by its continuance it becomes thicker, more ſolid, viſcid, of the conſiſtence of clay, and of a bitteriſh taſte.

CERUSE, or CERUSS, white-lead, a ſort of calx of lead, made by expoſing plates of that metal to the vapour of vinegar.

Ceruſs is uſed externally, either mixed in ointments, or by ſprinkling it on old gleeting and watery ulcers, and in many diſeaſes of the ſkin. If, when it is reduced into a fine powder, it is received in with the breath in inſpiration, and carried down into the lungs, it cauſes terrible aſthmas, that are almoſt incurable, and at laſt generally prove fatal. Sad inſtances of the very pernicious effects of this metal are too often ſeen among thoſe perſons who work lead in any form, but particularly among the workers in white lead. The painters uſe it in great quantities, and that it may be afforded cheap to them, it is generally adulterated with common whiting; the Engliſh and Dutch ceruſs are very bad in this reſpect: the Venetian ought always to be uſed by apothecaries.

CERUSS *of Antimony*, a medicine prepared by diſtilling powdered regulus of antimony with ſpirit of nitre, till no more fumes ariſe; what remains in the retort being pulveriſed and waſhed, makes the ceruſs of antimony, which is eſteemed a powerful diuretic.

CERVUS, the ſtag or deer-kind, in zoology, a genus of quadrupeds of the order of the pecora. Under this genus are comprehended the camelo-pardalis, the alce or elk, the rangifer or rein-deer, the capreolus, and the ſtag, and fallow-deer. See CAMELO-PARDALIS, &c.

CESSION, in law, an act by which a perſon ſurrenders and tranſmits to another perſon, a right which belonged to himſelf. Ceſſion is more particularly uſed in the civil law for a voluntary ſurrender of a perſon's effects to his creditors, to avoid impriſonment.

CESSION, in the eccleſiaſtical law, when an eccleſiaſtical perſon is created a biſhop, or when a parſon of a pariſh takes another benefice without diſpenſation, or being otherwiſe qualified. In both theſe caſes their firſt benefices become void by ceſſion, without any reſignation; and to thoſe livings that the perſon had, who was created biſhop, the king may preſent for that time, whoſoever is patron of them; and in the other caſe the patron may preſent: but by diſpenſation of retainer, a biſhop may retain ſome or all the preferments he was intitled to before he was made biſhop.

CESTUS, among ancient poets, a fine embroidered girdle ſaid to be worn by Venus, to which Homer aſcribes the faculty of charming and conciliating love.

CETACEOUS, an appellation given to a claſs or order of fiſhes, otherwiſe called plagiuri. See PLAGIURI. The term cetaceous, though properly only applicable to the whale kind, has nevertheleſs been uſed to denote any large fiſh, as the ſhark, ſea-fox, &c.

CETUS, in aſtronomy, a conſtellation of the ſouthern hemiſphere, comprehending twenty-two ſtars in Ptolemy's catalogue, twenty-one in Tycho Brahe's, and in the Britannic catalogue ſeventy-eight.

CHÆROPHYLLUM, chervil, in botany, an umbelliferious plant. It is a native of the ſouthern parts of Europe, and ſown annually with us in gardens. Chervil is a ſalubrious culinary herb; grateful, both to the palate and ſtomach; ſlightly aromatic; gently aperient and diuretic. The expreſſed juice is recommended, by Riverius and others, in dropſies; and Geoffroy relates, that he has found it, from experience, of remarkable ſervice in this diſeaſe; that it acts mildly and without irritation, and abates inflammatory ſymptoms.

CHÆTIA, in zoology, a ſort of inſect called in Engliſh, the hair-worm or Guinea-worm.

CHAFERY, a forge in an iron-mill, where the iron is hammered out into complete bars, and brought to perfection.

CHAFE-WAX, an officer in the chancery, who fits the wax for ſealing writs, patents, and other inſtruments iſſuing out from that court.

CHAFF, in huſbandry, the refuſe or ſtraw that is ſeparated from corn, by ſcreening or winnowing it.

CHAFF-FINCH, in ornithology, the Engliſh name of the fringilla, with a red-coloured breaſt, and black wings ſpotted with white.

The chaff-finch is a hardy bird, living upon any kind of ſeeds.

CHAN, *Catena*, a long piece of metal compoſed of ſeveral links, engaged the one in the another. They are made of divers metals, ſome round, ſome flat, others ſquare; ſome ſingle, ſome double; and ſerve to ſo many uſes, that it would be tedious to give an account of them all. Chain alſo implies a ſtring of gold, ſilver, or ſteel-wire, wrought like a tiſſue, which ſerves to hang watches, tweezer-caſes, and other valuable toys upon. It is alſo worn round the neck as a badge of office or dignity, by the Lord Mayor of London, Sheriffs, &c.

CHAIN-SHOT, in artillery is formed by having a ſhort chain which faſtens two cannon-balls together. Theſe are more particularly uſed in the ſea-ſervice for cutting and mangling a ſhip's rigging, and carrying away her maſts.

CHAIN, in ſurveying, an inſtrument of iron-wire, diſtinguiſhed into an hundred equal parts, called links, being uſed to meaſure lengths in ſurveying of land. They are of ſeveral ſorts, as

1. A chain of 100 feet long, each link being one foot; at each tenth foot there is a plate of braſs, with a figure engraved upon it, ſhewing readily how many links are from the beginning of the chain; and for more eaſe in reckoning, there is, or ſhould be, a braſs ring at every five links; that is, one between every two plates.

This chain is moſt convenient for meaſuring large diſtances.

2. A chain of 16 ½ feet in length, and made ſo as to contain a hundred links, with rings at every tenth link. This chain is moſt uſeful in meaſuring ſmall gardens or orchards, by perch or pole meaſure.

3. A chain of four poles or perches in length, called Gunter's chain, which is 66 feet, or 22 yards; for each perch contains 16 ½ feet. This whole chain is divided into a hundred links; whereof 25 is an exact perch or pole; and for readily accounting there is uſually a remarkable diſtinction by ſome plates or large ring, at the end of 25 links; alſo at the end of every tenth link it is uſual to faſten a plate of braſs with notches in it, ſhewing how many links there are from the beginning of the chain; and this chain, of all others, is the moſt convenient for land meaſure.

When you are to meaſure any line by this chain, you need have regard to no other denomination than chains and links only, which ſet down with a full point between them. Thus, for example, if you find the ſide of a cloſe to be 10 chains 14 links, it muſt be ſet down thus, 10. 14.

But if the links be under 10, a cypher muſt be prefixed: 10 chains 7 links muſt be ſet down 10. 07.

Then if the field, &c. be a ſquare or parallelogram, if you multiply the length expreſſed in chains and links, by the breadth expreſſed in the ſame manner, and cut off five figures from the product, thoſe toward the left hand will be acres; then multiply the figures ſeparated by four, cutting off the ſame number of figures, and you will have the roods, or quarters of an acre: and laſtly, multiply the remaining figures by 40, cutting off five as before, and you will have the ſquare perches.

Example. Let it be required to find the area of a field, in form of a parallelogram, whoſe length is 14 chains 10 links, and breadth 6 chains 5 links.

Then 14 10 × 6. 05 = 8. 53050; and 53050 × 4 = 2. 12200; and 12200 × 40 = 4. 88000. So that the area of the field is eight acres, 2 roods, and almoſt five perches.

The ſame method muſt be taken to find the area of all other figures, regard being had to the method laid down under each; viz. for triangles to multiply the baſe by half the perpendicular, &c.

CHAIR, *Cathedra*, anciently the ſuggeſtum, or pulpit, whence the prieſt or public orator ſpoke to the people. See CATHEDRA. It is ſtill applied to the place whence profeſſors or regents in the univerſities, deliver their lectures: thus we ſay, the profeſſor's chair. It is alſo applied to the chief magiſtrate of a city, or rather to the ſeat appropriated to his office: thus we ſay, next the chair.

CHAIR-MAN, the preſident or ſpeaker of an aſſembly. See PRESIDENT.

CHALCEDONY, *Chalcedonius*, in natural hiſtory, a genus of ſemi-pellucid gems, of an even and regular, not tabulated texture: of a ſemi-opake, cryſtalline baſis, and variegated with different colours, diſperſed in form of miſts and clouds. Of this genus there are many ſpecies, as the bluiſh white chalcedony; the browniſh black chalcedony, or ſmoaky jaſper or capnitis of the ancients; and the yellow and red chalcedony. All the chalcedonies give fire readily with ſteel, and make no efferveſcence with aqua-fortis.

CHALDRON, an Engliſh dry meaſure, conſiſting of thirty-ſix buſhels, heaped up according to the ſealed buſhel kept at Guildhall, London; but on ſhip-board, twenty-one chaldron of coals are allowed to the ſcore.

CHALICE, the cup or veſſel uſed to adminiſter the wine in the ſacrament; and by the Roman catholics in the maſs. The uſe of the chalice, or communicating in both kinds, is by the church of Rome denied to the laity, who communicate only in one kind, the clergy alone being allowed the privilege of communicating in both kinds.

CHALK, in natural hiſtory, the Engliſh name of the white, dry marle, with a duſty ſurface, found in hard maſſes, and called by authors, *creta*, and *terra creta*. It ferments more ſtrongly with acids than any other earth, and burns to lime. As a medicine chalk deſerves, perhaps, the higheſt place among the alkaline abſorbents; nor is it leſs uſeful in many of the ordinary affairs of life. Its uſe in cleaning various utenſils is well known, and it is in no ſmall repute as a manure, eſpecially for cold ſour lands; in which intention the ſoft unctuous chalk is moſt proper, as the dry, hard, and ſtrong chalk is for lime. It is a great improver of lands, and will even change the very nature of them: however, it is moſt adviſeable to mix one load of chalk, with two or three of dung, mud or freſh mould, whereby it will become a laſting advantage to the ground: the common allowance is fourteen loads of chalk to every acre.

Black CHALK, among painters, a kind of orchreous earth, of a cloſe ſtructure, and fine black colour, uſed in drawing upon blue paper.

Red CHALK, an indurated clayey ochre, common in the colour-ſhops, and much uſed by painters and artificers.

CHALKY-LAND, land lying on a chalky bottom, whereby it is ſtrongly impregnated with the virtues of the chalk. Theſe lands naturally produce may-weed, poppies, &c. ſaintfoin and trefoil likewiſe agree with them; and their beſt produce of corn is barley or wheat, though oats will likewiſe do well on them.

The beſt manure for chalky lands is rags, dung, and folding of ſheep. If rain happens to fall on them juſt after ſowing, it binds the earth ſo hard, that the corn cannot paſs through it; to prevent which misfortune, it is uſual to manure theſe lands with half-rotten dung, with which ſome mix ſand.

CHALLENGE, a cartel, or invitation to a duel. See DUEL.

CHALLENGE, in law, an exception made to jurors, who are returned to a perſon on a trial. This challenge is made either to the array, or to the polls; to the array, when exception is taken to the whole number of jurors impannelled; and to the polls, when an exception is made to one or more of the jury as not indifferent.

Challenge to the jurors is likewiſe divided into challenge principal or peremptory, and challenge for cauſe; that is, upon cauſe or reaſon alledged. Challenge principal is what the law allows without any cauſe alledged, or further examination: as a priſoner arraigned at the bar for felony, may challenge peremptorily the number allowed him by law, being twenty, one after another, alledging no further cauſe than his own diſlike: and the jurors ſo challenged, ſhall be put off, and new ones taken in their places. In caſes of treaſon and petit-treaſon, the number of thirty-five jurors may be peremptorily challenged, without ſhewing any cauſe; and more, both in treaſon and felony, may be challenged, ſhewing cauſe. If thoſe who proſecute for the king challenge a juror, they are to aſſign the cauſe; and if the cauſe alledged be not a good one, the inqueſt ſhall be taken. When the king is party, if the other ſide challenge any juror above the number allowed, he ought to ſhew cauſe of his challenge immediately, while the jury is full, and before they are ſworn. There may be a principal cauſe of challenge in civil actions, and a challenge for favour. The principal challenge is in reſpect of partiality, or default of the ſheriff, &c. Challenge for favour, is when the plaintiff or defendant is tenant to the ſheriff, or if the ſheriff's ſon has married the daughter of the party, &c.

CHALLENGE, among hunters. When hounds or beagles, at firſt finding the ſcent of their game, preſently open and cry, they are ſaid to challenge.

CHALYBEAT, in medicine, an appellation given to any liquid, or wine or water impregnated with particles of iron or ſteel. Dr. Short, in his hiſtory of the mineral waters, has claſſed them into the warm purging chalybeat, diuretic chalybeat, purging and plain ſulphur-waters.

Of the warm purging chalybeat waters, that of Buxton ſeems to be the principal.

The purging chalybeat contains a mineral ſpirit, ſulphur, vitriol, nitre, and ſea-ſalt, with a calcarious earth, of which ſome particles are attracted by the loadſtone, which proves them to be iron: of theſe the Scarborough-ſpa is now in the greateſt reputation.

The diuretic chalybeat water conſiſts of much the ſame principles with the former claſs, only the ſalts are in leſs proportion; of theſe there are great numbers in Yorkſhire.

CHAMADE, in war, a ſignal made by beat of drum for a conference with the enemy, when any thing is to be propoſed; as a ceſſation of arms to bring off the dead, or a ſignal made by the beſieged when they have a mind to deliver up a place upon articles of capitulation: in which caſe there is a ſuſpenſion of arms, and hoſtages delivered on both ſides.

CHAMÆDRYS, germander, in botany, a low creeping ſhrubby plant, which grows wild in ſome of the woods of France, Germany, and Switzerland: but with us it is raiſed in gardens, and flowers in June and July.

CHAMÆLEON, *Chamæleo*, in zoology, a ſpecies of lizard with a ſhort round tail, five toes on each foot, two or three of which adhere together. See LIZAD.

CHAMÆMELUM, camomile, in botany, a plant, the leaves and flowers of which have a ſtrong, not ungrateful ſmell; and a very bitter nauſeous taſte. The flowers are ſomewhat bitterer, and conſiderably more aromatic than the leaves; and the yellow diſk of the flower is, in both reſpects, far ſtronger than the white petala. The ſmell, as well as the taſte, is rather improved than weakened by drying, and does not ſoon ſuffer any conſiderable diminution in keeping. This plant, beſides its general virtues as a bitter, is ſuppoſed to have ſome degree of a carminative, anodyne, and antiſpaſmodic power, depending on its odorous matter. It is recommended in cholics of different kinds, particularly ſuch as ariſe from flatulencies or cold; in hyſterical and hypochondriacal diſorders, and ſpaſmodic and nephritic pains; in the pains of child-bed women, and deficiencies of the uterine purgations; and intermitting fevers, where a viſcidity of the humours, or obſtructions of the viſcera, render the Peruvian bark ineffectual or prejudicial. In this laſt intention, the camomile is generally aſſiſted by fixed alkaline ſalts, ſal-ammoniac, or rather aperients, and often alſo by corroborating materials.

The doſe of the dry flowers, in ſubſtance, is from ten to twelve grains to half a dram or more; in decoction or infuſion, two drams.

The leaves and flowers are frequently employed externally, in diſcutient and antiſeptic fomentations, and in emollient and carminative glyſters. They appear, from Dr. Pringle's experiments, to ſtand very high in the ſcale of antiſeptics; the ſoluble part of the flowers reſiſting the putrefaction of animal fleſh, with a power at leaſt of one hundred and twenty times greater than ſea ſalt.

CHAMÆPITYS, ground-pine, in botany, a low, hairy, creeping plant, which is annual, grows wild in ſandy and chalky grounds in ſome parts of England, and flowers in July. The leaves of ground-pine are recommended as aperients, and corroborants of the nervous ſyſtem; and ſaid to be particularly ſerviceable in female obſtructions, paralytic diſorders, and when continued for a length of time, either by themſelves or with the aſſiſtance of germander, in rheumatic, iſchiadic, and gouty pains. The leaves in ſubſtance, dried and powdered, are directed to be given from half a dram to a dram. Their virtues are extracted both by water and ſpirit, but moſt perfectly by the latter.

CHAMBER, in building, any room or apartment ſituated between the lowermoſt and the uppermoſt rooms: in moſt houſes there are two, in others three, or more ſtories of chambers.

Privy CHAMBER. Gentlemen of the privy chamber, are ſervants of the king, who attend on him and the queen at court, in their diverſions, &c. their number is forty-eight under the lord chamberlain, twelve of whom are in quarterly waiting, and two of theſe lie in the privy chamber. In the abſence of the lord-chamberlain, or vice-chamberlain, they execute the kings orders: at coronations, two of them perſonate the dukes of Aquitain and Normandy: and ſix of them, oppointed by the lord chamberlain, attend ambaſſadors from crowned heads to their audiences, and in public entries. The gentlemen of the privy chamber were inſtituted by Henry VII.

CHAMBER, in policy, the place where certain aſſemblies are held, alſo the aſſemblies themſelves. Of theſe, ſome are eſtabliſhed for the adminiſtration of juſtice, others for commercial affairs.

CHAMBER, in war, is ſaid to conſiſt of the three following. 1. Of a powder-chamber, or bomb-chamber, a place ſunk under ground for holding the powder, or bombs, where they may be out of danger, and ſecured from the rain. 2. Of the chamber of a mine, the place, moſt commonly of a cubical form, where the powder is confined. And 3. Of the chamber of a mortar, that part of the chace much narrower than the reſt of the cylinder, where the powder lies.

CHAMBERLAIN, an officer charged with the management and direction of a chamber. See CHAMBER. There are almoſt as many kinds of chamberlains as chambers, the principal whereof are as follow.

Lord CHAMBERLAIN *of Great Britain*,

Britain, the ſixth great officer of the crown, to whom belongs livery and lodging in the king's court; and there are certain fees due to him from each archbiſhop or biſhop, when they perform their homage to his majeſty; and from all peers, at their creation, or doing their homage.

At the coronation of every king, he he is to have forty ells of crimſon velvet, for his own robes. This officer, on the coronation-day, is to bring the king his ſhirt, coif, and wearing cloaths; and after the king is dreſſed, he claims his bed, and all the furniture of his chamber, for his fees: he alſo carries at the coronation, the coif, gloves, and linen to be uſed by the king, and the robes-royal and crown: he dreſſes and undreſſes the king on that day, waits on him before and after dinner, &c. To this officer belongs the care of providing all things in the houſe of lords in the time of parliament; to him alſo belongs the government of the palace of Weſtminſter: he diſpoſes likewiſe of the ſword of ſtate, to be carried before the king, to what lord he pleaſes.

Lord CHAMBERLAIN *of the Houſhold*, an officer who has the overſight and direction of all officers belonging to the king's chambers, except the precinct of his majeſty's bed-chamber. He has the overſight of the officers of the wardrobe at all the king's houſes, and of the removing wardrobes, or of beds, tents, revels, muſic, comedians, hunting, meſſengers, &c. retained in his majeſty's ſervice. He moreover has the overſight and direction of the ſerjeants at arms, of all phyſicians, apothecaries, ſurgeons, barbers, the king's chaplains, &c. and adminiſters the oath to all officers above ſtairs.

Other chamberlains are thoſe of the king's court of exchequer, of North Wales, of Cheſter, of the city of London, &c. in which caſes this officer is generally the receiver of all rents and revenues belonging to the place whereof he is chamberlain. In the exchequer there are two chamberlains who keep a controulment of the pells of receipts and exitus, and have certain keys of the treaſury, records, &c.

CHAMBERLAIN *of London* keeps the city money, which is laid up in the chamber of London: he alſo preſides over the affairs of maſters and apprentices, and makes free of the city, &c. His office laſts only a year, but the cuſtom uſually obtains to re-chooſe the ſame perſon, unleſs charged with any miſdemeanor in his office.

Vice-CHAMBERLAIN. See Vice-Chamberlain.

CHAMOIS, or CHARMOIS-GOAT, in zoology, the name of the rupi capra, a creature of the goat-kind, with erect and ſhort but-hooked horns. It is from the ſkin of this animal that the chamois leather is made.

CHAMPATRY, or CHAMPETRY, in law, a contract made with either the plaintiff or defendant in any ſuit at law, for giving part of the land, debt, &c. ſued for, to the party who undertakes the proceſs at his own proper charges, provided he ſucceeds therein.

CHAMPION, one who undertakes a combat in the place or quarrel of another; and ſometimes the word is uſed for him who fights in his own cauſe.

CHAMPION *of the King*, a perſon whoſe office it is, at the coronation of our kings, to ride armed into Weſtminſter-hall, while his majeſty is at dinner there, and, by the proclamation of a herald, make challenge to this effect, viz. "That if any man ſhall deny the king's title to the crown, he is there ready to defend it in ſingle combat, &c." which done, his majeſty drinks to him, and ſends him a gilt cup, with a cover, full of wine, which the champion drinks, and has the cup for his fee. The firſt champion of England was in 1377.

CHANCE, in a general ſenſe, a term applied to events, not neceſſarily produced, as the natural effects of any proper foreknown cauſe. We certainly mean no more in ſaying that a thing happened by chance, than that its cauſe is unknown to us: for chance itſelf is no natural agent or cauſe; it is incapable of producing any effect, and is no more than a creature of man's own making; for the things done in the corporeal world, are really done by the parts of the univerſal matter, acting and ſuffering, according to the laws of motion eſtabliſhed by the author of nature.

Chance is alſo confounded with fate and deſtiny.

CHANCE is more particularly uſed for the probability of an event, and is greater or leſs, according to the number of chances by which it may happen, compared with the number of chances by which it may either happen or fail. Thus, if any event has three chances to happen, and two to fail, the probability of its happening may be eſtimated 3-5ths, and the probability of its failing

2-nths. Therefore if the probability of happening and failing be added together the ſum will always be equal to unity.

If the probabilities of happening and failing are unequal, there is what is commonly called odds for or againſt the happening or failing, which odds are proportional to the number of chances for happening or failing.

If there is a certain number of chances by which the poſſeſſion of a ſum can be ſecured, and alſo a certain number of chances by which it may be loſt, that ſum may be inſured for that part of it, which ſhall be to the whole; as the number of chances there is to loſe it, is to the number of all the chances. For the manner of applying the doctrine of chances to gaming and annuities, ſee titles GAMING and INTEREST.

CHANCE-MEDLEY, in law, the accidental killing of a man, not altogether without the killer's fault, though without any evil intention; and is where one is doing a lawful act, and a perſon is killed thereby: for if the act be unlawful it is felony. The difference betwixt chance-medley and man-ſlaughter is this; if a perſon caſts a ſtone, which happens to hit one, and he dies, or if a workman, in throwing down rubbiſh from a houſe, after warning to take care, kill a perſon, it is chance-medley, and miſadventure: but if a perſon throws ſtones on the highway, where people uſually paſs; or a workman throws down rubbiſh from a houſe in cities and towns where people are continually paſſing; or if a man whips his horſe in the ſtreet, to make him gallop, and the horſe runs over a child, and kills it, it is man-ſlaughter: but if another whips the horſe, it is man-ſlaughter in him, and chance-medley in the rider. In chance-medley the offender forfeits his goods, but has a pardon of courſe.

CHANCEL, a part of the fabric of a Chriſtian church; between the altar and baluſtrade that incloſes it, where the miniſter is placed at the celebration of the communion.

CHANCEL, among us, is alſo the rector's freehold and part of his glebe, and therefore he is obliged to repair it; but where the rectory is impropriate, the impropriator muſt do it.

CHANCELLOR, an officer ſuppoſed originally to have been a notary or ſcribe under the emperors, and named *cancellarius*, becauſe he ſat behind a lattice, called in Latin *cancellus*, to avoid being crowded by the people.

Lord High CHANCELLOR *of Great Britain*, is the higheſt honour of the long robe, being made ſo, *per traditionem magni ſigilli, per dominum regem*, and by taking the oaths: he is the firſt perſon of the realm next after the king and princes of the blood, in all civil affairs; and is the chief adminiſtrator of juſtice next to the ſovereign, being the judge of the court of chancery. All other juſtices are tied to the ſtrict rules of the law in their judgment: but the chancellor is inveſted with the king's abſolute power, to moderate the written law, governing his judgment purely by the law of nature and conſcience, and ordering all things according to equity and juſtice.

The lord-chancellor not only keeps the king's great-ſeal, but alſo all patents, commiſſions, warrants, &c. from the king are, before they are ſigned, peruſed by him: he has the diſpoſition of all eccleſiaſtical benefices in the gift of the crown, under twenty pounds a year, in his majeſty's books; and he is ſpeaker of the houſe of lords.

CHANCELLOR *of a Dioceſe*, a lay officer under a biſhop, who is judge of his court. See BISHOP's *Court*.

CHANCELLOR *of the Duchy of Lancaſter*, an officer appointed to determine controverſies between the king and his tenants of the Duchy-lands and otherwiſe to direct all his majeſty's affairs belonging to that court. See DUCHY-*Court*.

CHANCELLOR *of the Exchequer*, an officer who preſides in that court, and takes care of the intereſt of the crown. He is always in commiſſion with the lord-treaſurer for the letting of crown-lands, &c. and has power, with others, to compound for forfeitures of lands, upon penal ſtatutes: he has alſo a great authority in managing the royal revenues, and in matters relating to the firſt fruits.

CHANCELLOR *of the Order of the Garter*, an officer who ſeals the commiſſions and mandates of the chapter and aſſembly of the knights, keeps the regiſter of their proceedings, and delivers acts thereof, under the ſeal of their order.

CHANCELLOR *of an Univerſity*, he who ſeals the diplomas, or letters of degrees, proviſion, &c. given in the univerſity. The chancellor of Oxford is uſually one of the firſt nobilty, choſen by the ſtudents themſelves in convocation. He is their chief magiſtrate; his office is *durante vita*, to govern the univerſity, preſerve and defend its rights and priveleges, convoke aſſemblies, and do juſtice among the members under his juriſdiction. Under the chancellor is the vice-chancellor, who is elected by the univerſity in convocation: he is always the head of ſome college, and in holy orders. His proper office is to execute the chancellor's power, to govern the univerſity according to her ſtatutes, to ſee that officers and ſtudents do their duty, that courts be duly called, &c. When he enters upon his office, he chooſes four provice chancellors out of the heads of the colleges, to execute his power in his abſence.

The chancellor of Cambridge is alſo uſually one of the prime nobility; and in moſt reſpects the ſame as that at Oxford, only he does not hold his office *durante vita*, but may be elected every three years. Under the chancellor there is a commiſſary, who holds a court of record for all privileged perſons and ſcholars under the degree of maſter of arts, where all cauſes are tried and determined by the civil and ſtatute-law, and by the cuſtom of the univerſity. The vice-chancellor of Cambridge is choſen annually, by the ſenate, out of two perſons nominated by the heads of the ſeveral colleges and halls.

CHANCERY, the grand court of equity and conſcience, inſtituted to moderate the rigour of the other courts that are bound to the ſtrict letter of the law.

The juriſdiction of this court is of two kinds, ordinary or legal, and extraordinary or abſolute. The ordinary juriſdiction is that wherein the lord chancellor who is judge of this court, in his proceedings and judgment is bound to obſerve the order and method of the common law; in ſuch caſes the proceedings, which were formerly in Latin, but now in Engliſh, are filed or enrolled in the petty-bag office; and the extraordinary, or unlimited power, is that juriſdiction which the court exerciſes in caſes of equity, wherein relief is to be had by bill and anſwer. The ordinary court holds plea of recognizances acknowledged in the chancery, writs of *ſcire facias*, for repeal of the king's letters patent, &c. alſo of all perſonal actions, by or againſt any officer of the court, and of ſeveral offences and cauſes by act of parliament: all original writs, commiſſion of bankrupts, of charitable uſes, of ideots, lunacy, &c. are iſſued hence. The extraordinary court gives relief for and againſt infants, notwithſtanding their minority; for and againſt married women, notwithſtanding their coverture. All frauds and deceits, for which there is no redreſs at common law, all breaches of truſt, confidences, and accidents, as to relieve obligers, mortgagers, &c. againſt penalties and forfeitures, where the intention was to pay the debt, are here remedied. But in all caſes where the plaintiff can have his remedy at law, he ought not to be relieved in chancery; and a thing which may be tried by a jury, is not triable in this court.

The court of chancery will not retain a ſuit for any thing under ten pounds value, except in caſes of charity, nor for lands, &c. under forty ſhillings per ann. In this court all patents, moſt ſorts of commiſſions, deeds between parties touching lands and eſtates, treaties with foreign princes, &c are ſealed and enrolled. Out of it are iſſued writs to convene the parliament and convocation, proclamations, and charters, &c.

CHANDELIER, in fortification, a kind of moveable parapet, conſiſting of a wooden frame, made of two upright ſtakes, about ſix feet high, with croſs planks between them; ſerving to ſupport faſcines to cover the pioneers. The chandeliers differ from blinds only in this, that the former cover the men only before, whereas the latter cover them alſo above. They are uſed in approaches, galleries, and mines, to hinder the workmen from being driven from their ſtations.

CHANGE, in the manege. To change a horſe, or change hand, is to turn or bear the horſe's head from one hand to the other, from the right to the left or from the left to the right. You ſhould never change your horſe without puſhing him forward upon the turn, and after the turn, puſh him on ſtraight, in order to ſtop.

CHANGE *of Seed*, in huſbandry, the ſowing a field or ſpot of ground firſt with one kind of ſeed, then another, and then a third kind. This practice, however univerſal, and perhaps neceſſary in the common method of huſbandry, is nevertheleſs ſuperſeded or rendered uſeleſs by the new method called horſe-hoeing huſbandry. See HORSE-HOEING.

CHANNEL, in architecture, that part of the Ionic capital under the abacus, and lies open upon the echinus or eggs, which has the centers or turnings on every ſide to make the volutes.

CHANNEL *of the Volute*, in the Ionic capital, the face of the circumvolution incloſed by a liſtel.

CHANNEL, in geography, an arm of

the ſea, or a narrow ſea between two continents, or between a continent and an iſland. Such are the Britiſh channel, St. George's channel, &c.

CHANNEL *of a River*, the bed of a river. See RIVER.

CHANNEL *of the Mouth of a Horſe*, that concavity in the middle of the lower jaw, appointed for a place to the tongue; which being bounded on each ſide by the bars, terminates in the grinders. It ſhould be large enough not to be preſſed with the bit mouth.

CHANTOR, a ſinger in the choir of a cathedral. The word is almoſt grown obſolete, choriſter or ſinging-man being commonly uſed.

CHANTOR is uſed by way of excellence for the præceptor or maſter of the choir, which is one of the firſt dignities of the chapter.

CHANTRY, or CHAUNTRY, a church or chapel endowed with lands, &c. for the maintenance of one or more prieſts to ſay maſs for the ſouls of the donors. Hence,

CHANTRY-RENTS, are ſtill paid to the crown by the purchaſers of thoſe lands.

CHAOS, that confuſion in which matter lay when newly produced out of nothing at the beginning of the world, before God, by his almighty word, had put it into the order and condition wherein it was after the ſix days creation.

Far from being of opinion that this notion of a chaos was particular to Moſes, all nations, barbarous or civilized, ſeem to have preſerved one common tradition of a ſtate of darkneſs and confuſion prior to the creation of the world; and it is probable they imbibed this notion from the ſame common ſource, notwithſtanding the ignorance of the people, and the fictions of the poets, have ſo much diſguiſed it.

CHAPE, among ſcabbard-makers, the metalline plate fixed on the end of a ſcabbard, to prevent the point of the ſword from piercing through it.

CHAPE, among ſportſmen, the tip of a fox's bruſh.

CHAPEAU, in heraldry, an ancient cap of dignity worn by dukes, being ſcarlet-coloured velvet on the outſide, and lined with fur. It is often borne above an helmet inſtead of a wreath, under gentlemen's creſts.

CHAPEL, or CHAPPEL, a place of divine worſhip, ſerved by an incumbent, under the denomination of a chaplain.

Knights of the CHAPEL, called alſo poor knights of Windſor, were inſtituted by Henry VIII. in his teſtament. Their number was at firſt thirteen, but has been ſince augmented to twenty-ſix. They aſſiſt in the funeral ſervices of the kings of England: they are ſubject to the office of the canons of Windſor, and live on penſions aſſigned them by the order of the garter. They wear a blue or red cloak, with the arms of St. George on the left ſhoulder.

CHAPITERS, in architecture, the ſame with capitals. See CAPITAL.

CHAPLAIN, an eccleſiaſtic who officiates in the chapel.

CHAPLET, a ſtring of beads uſed by the Roman catholics to count the number of their prayers. The invention of it is aſcribed to Peter the hermit, who probably learned it of the Turks.

CHAPLET, in architecture, a ſmall ornament carved into round beads, pearls, olives, and paternoſters, as is frequently done in baguettes.

CHAPTER, *Capitulum*, in eccleſiaſtical policy, a ſociety of clergymen belonging to the cathedrals and collegiate churches.

CHAPTER is applied to aſſemblies held by religious and military orders for regulating their affairs, and alſo to the hall where ſuch aſſemblies are convoked. In monaſteries, the chapter is uſually in the middle of the cloiſters.

CHAPTER, in matters of literature, a diviſion in a book for keeping the ſubject treated of more clear and diſtinct. St. Auguſtine compares them to inns, inaſmuch as they refreſh the reader, as the other the traveller.

CHARA, in botany, a genus of plants, without either flower-petals, or pericarpium, having a ſingle ovato-oblong ſeed.

CHARACTER, any mark whatever, ſerving to repreſent either things or ideas: thus, letters are characters, types, or marks of certain ſounds; words, of ideas, &c. See LETTER, &c.

Characters are of infinite advantage in almoſt all ſciences, for conveying, in the moſt conciſe and expreſſive manner, an author's meaning: however, ſuch a multiplicity of them, as we find uſed by different nations, muſt be allowed to be a very conſiderable obſtacle to the improvement of knowledge; ſeveral authors have therefore attempted to eſtabliſh characters that ſhould be univerſal, and which each nation might read in their own language, and conſequently, which ſhould be real, not nominal or arbitrary, but expreſſive of things themſelves; thus, the univerſal character for a horſe would be read by an Engliſhman, *horſe*; by a Frenchman, *cheval*; by the Latins, *equus*, &c.

Literal characters may be divided, with reſpect to the nations among whom they have been invented, into Greek characters, Hebrew characters, &c. The Latin characters now uſed through all Europe, were formed from the Greek, as the Greek was from the Phœnician, and the Phœnician, as well as the Chaldee, Syriac, and Arabic characters, were formed from the ancient Hebrew. It was in 1091 that the Gothic characters, invented by Ulfilas, were aboliſhed, and the Latin ones eſtabliſhed in their room.

CHARACTER, is uſed in ſeveral of the arts, for a ſymbol, contrived for the more conciſe and immediate conveyance of the knowledge of things. We ſhall here ſubjoin the principal of them.

CHARACTERS *in Algebra.* The firſt letters of the alphabet, as a, b, c, d, *&c.* are generally the characters of the given quantities; and the laſt letters, as x, y, z, *&c.* the characters of the quantities ſought. Some however uſe the conſonants to repreſent the known, and the vowels to repreſent the unknown quantities.

m, n, r, s, t, *&c.* are the characters of indeterminate exponents, whether ratios or powers. Thus xm, yn, zr, *&c.* imply undetermined powers of different kinds; mx, ny, rz, different multiples, or ſubmultiplies, of the quantities x, y, z, according as m, n, r, are either whole numbers or fractions.

$+$ *plus*, or *more*, is the ſign of real exiſtence of the quantity it ſtands before, and is called an affirmative or poſitive ſign. It is alſo the mark of addition: thus $a+b$, or $6+9$, implies that a is to be added to b, or 6 added to 9.

$-$ *minus*, or *leſs*, before a ſingle quantity, is the ſign of negation or negative exiſtence, ſhewing the quantity to which it is prefixed to be leſs than nothing. But between quantities it is the ſign of ſubtraction; thus $a-b$, or $8-4$, implies b ſubtracted from a, or 8 after 4 has been ſubtracted.

$=$ *equal*, the ſign of equality, though Des Cartes and ſome others uſe this marked $\propto$; thus, $a=b$ ſignifies that a is equal to b. Wolfius and ſome others uſe the mark $=$ for the idenity of ratios.

$\times$ *into*, or *with*. The ſign of multiplication, ſhewing that the quantities on each ſide the ſame are to be multiplied by one another, as $a \times b$ is to be read a multiplied into b; 4×8, the product of 4 multiplied into 8. Wolfius and others make the ſign of multiplication a dot between the two factors; thus, $5 \cdot 4$ ſignifies the product of 5 and 4. In algebra the ſign is commonly omitted, and the two quantities put together; thus, bd expreſſes the product of b and d. When one or both of the factors are compounded of ſeveral letters, they are diſtinguiſhed by a line drawn over them; thus, the factum of $a+b-c$ into d, is wrote $d \times \overline{a+b-c}$. Leibnitz, Wolfius, and others, diſtinguiſh the compound factors, by including them in a parentheſis thus $(a \times b-c)\,d$.

$\div$ *by.* The ſign of diviſion; thus, $a \div b$ denotes the quantity a to be divided by b. In algebra the quotient is often expreſſed like a fraction, thus $\frac{a}{b}$ denotes the quotient of a divided by b. Wolfius makes the ſign of diviſion two dots; thus, $12:4$ denotes the quotient of 12 divided by $4=3$. If either the diviſor or divided, or both, be compoſed of ſeveral letters; for example, $a+b \div c$, inſtead of writing the quotient like a fraction, $\frac{a+b}{c}$, Wolfius includes the compound quantities in a parentheſis, thus $(a+b):c$.

⊚ *involution.* The character of involution.

ω *evolution.* The character of evolution, or the extracting of roots.

$>$ or ⊏ are ſigns of a majority; thus, $a > b$, expreſſes that a is greater than b.

$<$ or ⊐ are ſigns of minority; and when we would denote that a is leſs than b, we write $a < b$, or a ⊐ b.

∽ is the character of ſimilitude uſed by Wolfius and Leibnitz, and others: it is uſed in other authors for the difference between the two quantities, while it is unknown which is the greater of the two.

$::$ *ſo is.* The mark of geometrical proportion disjunct, and is uſually placed between two pair of equal ratio, as $3:6::4:8$, ſhews that 3 is to 6 as 4 is to 8.

$\div\!\div$ the mark of geometrical proportion continued, implies the ratio to be ſtill carried on without interruption, as 2, 4, 8, 16, 32, 64 $\div\!\div$ are in the ſame uninterrupted proportion.

$\surd$ *irra-*

√ *irrationality.* The character of a ſurd root, and ſhews, according to the index of the power that is ſet over it, or after it, that the ſquare, cube, or other root is extracted, or to be extracted; thus, $\sqrt{}\,16$, or $\sqrt[2]{}\,16$ or $\sqrt{}\,(2)\ 16$, is the ſquare root of 16. $\sqrt[3]{}\,25$, the cube root of 25, &c.

This character ſometimes affects ſeveral quantities, diſtinguiſhed by a line drawn over them thus, $\sqrt{\overline{b+d}}$ denotes the ſquare root of the ſum of *b* and *d*. When any term or terms of an equation are wanting, they are generally ſupplied by one or more aſteriſms: thus in the equation.

$$\left.\begin{matrix} y^2+py+\frac{1}{4}p^2+q \\ -py-\frac{1}{2}p^2 \end{matrix}\right\}=0,$$ the term $\pm py$ vaniſhing, is marked with an aſteriſm, as $y^2 * -\frac{1}{4}p^2+q$.

CHARACTERS *uſed in Aſtronomy.*

Characters of the Planets.

♄	Saturn	♀	Venus
♃	Jupiter	☿	Mercury
♂	Mars	☽	Moon
☉	Sun	⊕	Earth

Of the ſigns.

♈	Aries	♎	Libra
♉	Taurus	♏	Scorpio
♊	Gemini	♐	Sagittarius
♋	Cancer	♑	Capricornus
♌	Leo	♒	Aquarius
♍	Virgo	♓	Piſces

Of the aſpects.

☌ or S.	Conjunct.	△	Trine
S S	Semiſextile	Bq	Biquintile
⚹	Sextile	V c	Quincunx
Q	Quintile	☍	Oppoſition
□	Quartile	☊	Dragon's head
Td	Tredecile	☋	Dragon's tail

Of time.

A. M. *ante meridian,* before the ſun comes upon the meridian.

O. or N. noon.

P. M. *poſt meridiem,* when the ſun is paſt the meridian.

CHARACTERS *in Geometry and Trigonometry.*

∥	The character of paralleliſm	$\overset{v}{=}$	equiangular, or ſimilar
△	triangle	$\overset{!}{=}$	equilateral
□	ſquare	<	an angle
▯ ▭	rectangle	∟	right angle
⊙	circle	⊥	perpendicular

° denotes a degree; thus 45° implies, 45 degrees. ′ a minute; thus, 50′, is 50, minutes. ″, ‴, ⁗, denote ſeconds, thirds, and fourths: and the ſame characters are uſed where the progreſſions are by tens, as it is here by ſixties.

CHARACTERS *uſed in the Arithmetic of Infinities.*

A dot over a letter is the character of an infiniteſimal or fluxion; thus, $\dot{x}\ \dot{y}$, *&c.* expreſs the fluxions or differentials of the variable *x* and *y*; and two, three, or more dots denote ſecond, third, or higher fluxions. Leibnitz, inſtead of a dot, prefixes the letter *d* to the variable quantity, in order to avoid the confuſion of dots in the differences of differentials. See FLUXIONS and DIFFERENTIAL *Calculus.*

CHARACTERS *in Grammar, Rhetoric, Poetry, &c.*

( )	parentheſis	‸	caret and circumflex
[ ]	crotchet	“	quotation
-	hyphen	† ‡ and *	references
’	apoſtrophe	§	ſection or diviſion
′	emphaſis or accent	¶	paragraph
˘	breve		
¨	dyalyſis		

F. R. S. fellow of the royal ſociety.

SS. T. D. doctor in divinity

V. D. M. miniſter of the word of God

LL. D. doctor of Laws.

J. V. D. doctor of civil and canon law

M. D. doctor in phyſic

A. M. maſter of arts

A. B. bachelor of arts

See COMMA, COLON, SEMICOLON, &c.

CHARACTERS *in Medicine and Pharmacy.*

℞ receipe

ā āā, or ana, of each alike

℔ a pound or pint.

℥ an ounce

ʒ a drachm

℈ a ſcruple

gr. grains

ſs, half of any thing.

cong. congius, a gallon

coch. cochleare, a ſpoonful

M. manipulus, a handful

P. a pugil

P. Æ. equal quantities

S. A. according to art

q. s. a ſufficient quantity

q. pl. as much as you pleaſe

P. P. pulvis patrum, the jeſuit's bark

Characters uſed in muſic, and of muſical notes, with their proportions, are as follow.

𝆶	character of a large	8
𝆷	a long	4
𝅜	a breve	
𝅝	a ſemibreve	1
𝅗𝅥	minim	$\frac{1}{2}$
𝅘𝅥	crochet	$\frac{1}{4}$
𝅘𝅥𝅮	quaver	$\frac{1}{8}$
𝅘𝅥𝅯	ſemiquaver	1-16th
𝅘𝅥𝅰	demiſemiquaver	1-32d

♯ character of a ſharp note; this character at the beginning of a line, or ſpace, denotes that all the notes in that line are to be taken a ſemitone higher, than in the natural ſeries; and the ſame affects all the octaves above or below, though not marked: but when prefixed to any particular note it ſhews that note alone to be taken a ſemitone higher than it would be without ſuch character.

♭ or *b*, character of a flat note: this is the contrary to the other above, that is, a ſemitone lower.

♮ character of a natural note: when in a line or ſeries of artificial notes, marked at the beginning ♭ or ♯, the natural note happens to be required, it is denoted by this character

𝄞 character of the treble cliff.

𝄡 character of the mean cliff.

𝄢: baſſ cliff.

2-4ths, or 4-8ths, characters of common duple time, ſignifying the meaſure of two crotchets to be equal to two notes, of which four makes a ſemibreve.

C, 𝄵 Ↄ̸ characters that diſtinguiſh the movements of common time, the firſt implying ſlow, the ſecond quick, and the third very quick.

1-half, 2-3ds, 3-4ths, 3-8ths, 3-16ths, characters of ſimple triple time, the meaſure of which is equal to three ſemibreves, or to three minims.

4-6ths, 6-8ths, or 6-16ths, characters of ſingle triple time, where the meaſure is equal to ſix crochets or ſix quavers.

9-4ths, or 9-8ths, or 9-16ths, or 9-1ſt, or 9-2d, characters of compound triple time.

4-12ths, 8-12ths, or 12-16ths, or 1-12th, or 2-12th, characters of that ſpecies of triple time, called the meaſure of twelve times. See Triple.

Numerical Characters, uſed to expreſs numbers, are either letters or figures.

The Arabic character, called alſo the common one, becauſe it is uſed almoſt throughout Europe in all ſorts of calculations, conſiſts of theſe ten digits, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0.

The Roman numeral character conſiſts of ſeven majuſcule letters of the Roman alphabet, viz. I, V, X, L, C, D, M.

The I denotes one, V five, X ten, L fifty, C a hundred, D five hundred, and M a thouſand.

The I repeated twice makes two, II; thrice, three, III; four is expreſſed thus IV, as I before V or X takes an unit from the number expreſſed by theſe letters. To expreſs ſix an I is added to a V, VI; for ſeven, two, VII, and for eight, three, VIII: nine is expreſſed by an I before X, thus IX.

The ſame remark may be made of the X before L or C, except that the diminution is by tens; XL denotes forty, XC ninety, and LX ſixty. The C before D or M diminiſhes each by a hundred.

The number five hundred is ſometimes expreſſed by an I before a C inverted; and inſtead of M, which ſignifies a thouſand, an I is ſometimes uſed between two C's, the one direct, and the other inverted, thus CIↃ. The addition of C and Ↄ before or after, raiſes CIↃ by tens, thus CCIↃↃ expreſſes ten thouſand, CCCIↃↃↃ, a hundred thouſand.

CHARACTER, in epic and dramatic poetry, what is peculiar in the manners of any perſon, and what diſtinguiſhes him from all others. The poetical character, ſays Mr. Boſſu, is not properly any particular virtue or quality, but a compoſition of ſeveral which are mixed together, in a different degree, according to the neceſſity of the fable and the unity of the action; there muſt be one, however, to reign over all the reſt, and this muſt be found, in ſome degree, in every part. This firſt quality, in Achilles, is wrath; in Ulyſſes, diſſimulation; and in Æneas, mildneſs: but as theſe characters cannot be alone, they muſt be accompanied with others to embelliſh them, as far as they are capable, either by hiding their defects, as in the anger of Achilles, which is palliated by extraordinary valour; or by making them center in ſome ſolid virtue, as in Ulyſſes, whoſe diſſimulation makes a part of his prudence; and in Æneas, whoſe mildneſs is employed in a ſubmiſſion to the will of the gods. In the making up of which union, it is to be obſerved, the poets have joined together ſuch qualities as are by nature the moſt compatible; valour with anger, piety with mildneſs, and prudence with diſſimulation.

The fable required prudence in Ulyſſes, and piety in Æneas; in this, therefore, the poets were not left to their choice: but Homer might have made Achilles a coward without abating any thing from the juſtneſs of his fable: ſo that it was the neceſſity of adorning his character that obliged him to make him valiant: the character, then of a hero in the epic poem, is compounded of three ſorts of qualities; the firſt eſſential to the fable; the ſecond, embelliſhments of the firſt; and valour, which ſuſtains the other two, makes the third.

Unity of character is as neceſſary as the unity of the fable: for this purpoſe a perſon ſhould be the ſame from the beginning to the end: not that he is always to betray the ſame ſentiments, or one paſſion; but that he ſhould never ſpeak nor act inconſiſtently with his fundamental character.

For inſtance, the weak may ſometimes ſally into a warmth, and the breaſt of the paſſionate be calm, a change which introduces in the drama a very affecting variety; but if the natural diſpoſition of the former was to be repreſented as boiſterous, and that of the latter mild and ſoft, they would both act out of character, and contradict their perſons.

True characters are ſuch as we truly and really ſee in men, or may exiſt without any contradiction to nature; no man queſtions, but there have been men as generous and as good as Æneas, as paſſionate and as violent as Achilles, as prudent and wiſe as Ulyſſes, as impious and atheiſtical as Mezentius, and as amorous and paſſionate as Dido; all theſe characters, therefore, are true, and nothing but juſt imitations of nature: on the contrary, a character is falſe when an author ſo feigns it that we can ſee nothing like it in the order of nature wherein he deſigns it ſhall ſtand; theſe characters ſhould be wholly excluded from a poem, becauſe, tranſgreſſing the bounds of probability and reaſon, they meet with no belief from the readers; they are fictions of the poet's brain, not imitations of nature; and yet all poetry conſiſts in an imitation of nature.

CHARACTERISTIC, a peculiar mark or character whereby a perſon or thing is diſtinguiſhed from all others.

Grammarians uſe the term characteriſtic, in a more limited ſenſe, for the principal letter of a verb, preſerved through all its moods and tenſes, derivatives, and compounds: ſuch is the letter *w* in the word *brew*.

The characteriſtic letter is of moſt uſe in the formation of Greek verbs; as being always the ſame in the correſponding tenſes of the ſame conjugation, that is, in thoſe formed from the preſent, future, or preterit. See VERB, MOOD, TENSE, &c.

CHARACTERISTIC *of a Logarithm*, the ſame with its index or exponent.

CHARACTERISTIC *of a Curve*, in the higher geometry, a rectilinear right-angled triangle, whoſe hypothenuſe makes a part of the curve not ſenſibly different from a right line.

It is ſo called becauſe curve lines are uſed to be diſtinguiſhed thereby.

CHARCOAL, a ſort of fuel, made of wood charred or half burnt.

There are conſiderable differences in the coals of different vegetables, in regard to their habitude to fire: the coals of the blackberry-bearing alder, of the hazel, the willow, and the lime-tree, are ſaid to anſwer beſt for the making of gunpowder, and other pyrotechnicol compoſitions, perhaps from their being eaſily inflammable: for the reduction of metallic calces, thoſe of the heavier woods, as the oak and the beech, are preferable, theſe ſeeming to contain a larger proportion of the phlogiſtic principle, and that, perhaps, in a more fixed ſtate; conſidered as a common fuel, thoſe of the heavy woods give the greateſt heat, and require the moſt plentiful ſupply of air to keep them burning; thoſe of the light woods preſerve a glowing heat, without much draught of air, till the coals themſelves are conſumed; the bark commonly crackles and flies about in burning, which the coal of the wood itſelf very ſeldom does. Charcoal, in burning, is ſuppoſed to emit a peculiar vapour, which confined and accumulated in a cloſe room, proves poiſonous to animals: there are, indeed, too many examples of fatal conſequences from the burning of charcoal in cloſe places; not, however, from the charcoal giving out any pernicious matter, but from the quality of the air of the room being altered by the fire: air that has paſſed through burning fuel is no longer capable of ſupporting either fire or the life of animals.

CHARDS *of Artichokes*, in gardening, the leaves of fair artichoke plants, tied and wrapped up in ſtraw all over; but the top, during the autumn and winter: this makes them grow white, and loſe ſome of their bitterneſs.

CHARDS *of Beets*, white beets covered over with dry dung, during the winter-ſeaſon, when they produce large tops, with a downy cotton ſhoot, which is the true chard to be uſed in pottages, intermaſſes, &c.

CHARGE, in gunnery, the quantity of gun-powder and ball, wherewith a gun is loaded for execution. The common allowance for the charge of powder of a piece of ordnance is half the weight of the ball. In the Britiſh navy, the allowance for thirty-two pounders is but ſeven ſixteenths of the weight of the bullet. But a late author is of opinion, that if the powder in all ſhip cannon whatever was reduced to one third of the weight of the ball, or even leſs, it would be of conſiderable advantage, not only by ſaving ammunition, but by keeping the guns cooler and quieter, and at the ſame time more effectually injuring the veſſels of the enemy.

CHARGE, in heraldry, is applied to the figures repreſented on the eſcutcheon, by which the bearings are diſtinguiſhed from one another: and it is to be obſerved, that too many charges are not ſo honourable as fewer.

Charges in the manege, are outward applications to the bodies of horſes, &c. and are prepared divers ways, according to the nature of the diſeaſe.

CHARGE, or **OVERCHARGE**, in painting, an exaggerated repreſentation of any perſon, wherein the likeneſs is preſerved, but withal ridiculed: few painters have the genius to ſuceed in theſe charges. The method is, to pick out and heighten ſomething amiſs in the face, whether by way of defect or redundancy; thus, if nature has given a man a noſe a little larger than ordinary, the painter falls in with her, and makes the noſe extravagantly long; and ſo in other caſes.

CHARGE *of Lead*, denotes a quantity of thirty-ſix pigs.

CHARGED, in heraldry, a ſhield carrying ſome figure is ſaid to be charged therewith; ſo alſo when one bearing, or charge, has another figure added upon it, it is properly ſaid to be charged.

CHARGED CYLINDER, in the art of war, that part of the chace of a gun where the powder and ball are contained.

CHARIOT, a half coach, having only a ſeat behind.

Triumphal **CHARIOT**, one of the principal ornaments of the Roman celebration of a victory. See TRIUMPH. The Roman triumphal chariot was generally made of ivory, round like a tower, or rather of a cylindrical figure; uſually drawn by four white horſes, but oftentimes by lions, elephants, tygers, bears, leopards, dogs, &c.

CHARITY, among divines, one of the three grand theological virtues, conſiſting in the love of God, and of our neighbour. Charity, among moraliſts, is uſed for the effect of a moral virtue; and conſiſts in ſupplying the neceſſities of others, whether with money, council, aſſiſtance, or the like.

CHARITY-SCHOOLS, ſchools erected by the voluntary contributions of the inhabitants of pariſhes, for teaching poor children to read and write, and other neceſſary parts of education. In moſt charity-ſchools the children are likewiſe cloathed and put out to trades, ſervices, &c. on the ſame charitable foundation.

* **CHARRES I.** king of Great Britain, was born at Dumferling, in Scotland, the 19th of November, 1600: he ſucceeded his father James I. in 1625; and the very ſame year married Henrietta of France, the daughter of Henry IV. Two years after he ſent aſſiſtance to the French Calviniſts, to prevent the taking of Rochelle, but the Engliſh being defeated, and Rochelle taken, a treaty of peace was concluded between the two crowns. The king engaging in ſeveral arbitrary meaſures to obtain that money which was refuſed him by the parliament, they were greatly diſſatisfied; and at length his majeſty attempting to take ſeveral members out of the houſe of commons while they were cenſuring his conduct, they roſe into an open rebellion, as the Scots had done ſome time before, which produced a bloody civil war, which laſted till this unhappy king was ſtripped of his dominions, and the Scots, with whom he had taken refuge, having delivered him up to the Engliſh, he was at laſt brought to his trial before a high court of juſtice, was found guilty, and was beheaded before the Banquetting-houſe at White-hall, on the 30th of January, 1648, in the forty-ninth year of his age, and the twenty-fifth of his reign.

* **CHARLES II.** king of Great Britain, and the ſon of Charles the firſt, was born on the 29th of May, 1630. Being

informed while at the Hague of the death of his father, he went into Scotland, where he was proclaimed king of England, Scotland, and Ireland; but Cromwell, to whom the command of the army was then given, marched againſt him with the Engliſh forces, defeated him near Dunbar, and afterwards following him to Worceſter, entirely routed his army. He, by means of ſeveral diſguiſes, made his eſcape, and arrived at Roan, where finding that the French had entered into a treaty with Cromwell, he retired to Cologn. The Spaniards then declared war again Cromwell, and at the ſame time allowed prince Charles a penſion, who went into Flanders, and from thence retired to Holland, where he ſtayed till Cromwell's death, which happened on the third of September, 1658. In 1660, general Monk having rendered himſelf abſolute maſter of the parliament, recalled the prince and his two brothers; on which Charles was crowned the following year, and in 1662 married to the infanta of Portugal. In 1665 war was declared againſt the Dutch and French, and on the third of June a great victory was obtained over the Dutch at ſea, and the ſame year a moſt terrible peſtilence broke out in London. In 1666 another victory was obtained over the Dutch at ſea, ſoon after which ſir Robert Holmes burnt one hundred and fifty ſail of Dutch merchantmen. In 1667 the Dutch taking advantage of our being off our guard, entered Chatham river, and burnt ſeveral men of war. But king Charles, notwithſtanding this piece of treachery, concluded the peace at Breda. This was however but of ſhort continuance, for in the year 1672, king Charles joined with the French, who attacked the Dutch by land, while the Engliſh engaged their fleets at ſea; but a peace was concluded two years after. King Charles died Feb. 16, 1685, in the fifty-fifth year of his age, and was buried in Henry the Seventh's chapel, in Weſtminſter-abbey. He was ſucceeded by his brother James, duke of York.

CHARLES's-WAIN, in aſtronomy, ſeven ſtars in the conſtellatian called urſa major, or the great bear. See URSA.

CHARLOCK, the Engliſh name of a plant called by botaniſts, rapiſtrum, or crambe. See CRAMBE. Charlock is a very troubleſome weed in corn-fields, where we find two ſpecies of it very common, viz. one with a yellow flower, and the other with a white one. To prevent its growth the farmers mix horſe dung with their cow dung uſed in manure, as the laſt is very apt to breed the charlock. When a field of barley is much infeſted with it, they mow it down in May, when in flower, taking care only to cut it ſo low as juſt to take off the tops of the leaves of the barley.

CHARM, a term derived from the Latin, *carmen*, a verſe, and uſed to denote a magic power, or ſpell, by which, with the aſſiſtance of the devil, ſorcerers and witches were ſuppoſed to do wonderful things, far ſurpaſſing the power of nature. Theſe things are now ſufficiently exploded.

CHARNEL, or CHARNEL-HOUSE, a kind of portico, or gallery, uſually in or near a church-yard, over which were anciently laid the bones of the dead, after the fleſh was wholly conſumed.

Charnel-houſes are now uſually adjoining to the church.

* CHARON, in fabulous hiſtory, the ſon of Erebus and Nox, whoſe office was to ferry the ſouls of the deceaſed over the waters of Acheron, for which each was to pay a piece of money. For this reaſon the Pagans had a cuſtom of putting a piece of money into the mouth of the deceaſed, that they might have ſomething to pay Charon for their paſſage.

Charon is repreſented as a mean ſqualid old man, meanly dreſſed, with a buſhy grey beard, and of a moroſe diſpoſition.

CHARRE, or GILT-CHARRE, a truttaceous fiſh, called by many carpio, and reckoned by Artedi a ſpecies of ſalmon, leſs than a foot in length, with five rows of teeth in its palate.

Red CHARRE, a ſpecies of ſalmon, called by authors umbla minor: it is much of the ſame ſize with the former, with the belly-fin red, and the under-jaw a little longer than the upper-one.

CHART, or SEA-CHART, an hydrographical map, or a projection of ſome parts of the earth's ſuperficies in plano, for the uſe of navigators. Charts differ very conſiderably from geographical or land maps, which are of no uſe in navigation. Nor are ſea-charts all of the ſame kind, ſome being what we call plane-charts, others mercator-charts, and others globular charts.

Plane CHART is a repreſentation of ſome part of the ſuperfices of the terraqueous globe, in which the meridians are ſuppoſed parallel to each other, the parallels of latitude at equal diſtances, and conſequently the degrees of latitude and longitude every where equal to each other. See Plane Chart.

Mercator's CHART is that where the meridians are ſtraight lines, parallel to each other, and equidiſtant; the parallels are alſo ſtraight lines, and parallel to each other: but the diſtance between them increaſes from the equinoctial towards either pole, in the ratio of the ſecant of the latitude to the radius.

Globular CHART, a meridional projection, wherein the diſtance of the eye from the plane of the meridian, upon which the projection is made, is ſuppoſed to be equal to the ſine of the angle of 45°. This projection comes the neareſt of all to the nature of the globe, becauſe the meridians therein are placed at equal diſtances; the parallels alſo are nearly equidiſtant, and conſequently the ſeveral parts of the earth have their proper proportion of magnitude, diſtance, and ſituation, nearly the ſame as on the globe itſelf. See Globular *Projection*.

Chorographic CHARTS, deſcription of particular countries. See Chorography.

Heliographic CHARTS, deſcriptions of the body of the ſun, and of the maculæ or ſpots obſerved in it. See Heliography.

Hydrographic CHARTS, ſheets of large paper, whereon ſeveral parts of the land and ſea are deſcribed, with their reſpective coaſts, harbours, ſounds, flats, rocks, ſhelves, ſands, &c. together with the longitude and latitude of each place, and the points of the compaſs. See Mercator's *Chart*.

Selenographic CHARTS, particular deſcriptions of the ſpots, appearances, and maculæ of the moon. See Selenography.

Topographic CHARTS, draughts of ſome ſmall parts of the earth only, or of ſome particular places, without regard to its relative ſituation.

CHARTA-MAGNA, an ancient inſtrument, containing ſeveral privileges and liberties granted to the church and ſtate by Edward the Confeſſor, together with others relating to the feudal laws of William the Conqueror, granted by Henry I. all confirmed by the ſucceeding princes. See Magna-Charta.

CHARTER, in law, a written inſtrument or evidence of things acted between one perſon and another. Charters of private perſons are deeds and inſtruments for the conveyance of lands, &c. Here the purchaſer of land ſhall have all the charters and deeds, as incident to the ſame, and for the maintenance of his title. But this is underſtood where the feoffer is not bound to a general warranty of the land.

CHARTER *of the King*, is where the king makes a grant to any perſon or body politic, as a charter of exemption, of privilege, pardon, &c.

CHARTER-LAND, ſuch as a perſon holds by charter; that is, by evidence in writing, otherwiſe termed freehold. See Freehold.

CHARTY-PARTY, in commerce, a deed or writing indented; made between merchants and ſea-faring men, concerning their merchandiſe and maritime affairs. A charter-party of affreightment, ſettles the agreement in relation to the freight of a ſhip and cargo, between the merchant and commander or maſter of the veſſel. It binds the maſter to deliver the cargo in good condition at the place of diſcharge, &c.

In thoſe charter-parties, if the dangers of the ſea are excepted, it has been adjudged that ſuch exception extends as well to any danger upon the ſea from pirates or men of war, as to common dangers by ſhipwreck, tempeſts, &c.

CHARYBDIS, a whirl-pool in the ſtreight of Meſſina, between Italy and Sicily, much celebrated in the writings of ancient poets.

CHASE, a great quantity of ground lying open and privileged for wild beaſts and wild fowl. A chaſe differs from a foreſt, inaſmuch as it may be in the hands of a ſubject, which a foreſt in its proper nature cannot; and from a park, as it is not incloſed, and hath more officers. A chaſe is not endowed like a foreſt with ſo many liberties, as the courts of attachment, ſwainmoe, and juſtice-ſeat; and cannot lawfully be made, without licence from the king under the broad ſeal.

CHASING *of Gold, Silver, &c.* See Enchasing.

CHASTE-TREE, the vitex. See Vitex.

* CHAUCER, (GEOFFREY) the moſt eminent of the Engliſh poets of his time, was born in 1328, and educated at Cambridge, from whence he removed, to complete his ſtudies at Oxford. He afterwards travelled, and at his return entered himſelf in the Inner Temple, where he ſtudied the municipal laws of England. Being taken notice of at court, he became page to king Edward III. gentleman of

the privy-council, and afterwards ſhield-bearer to the king, who alſo granted him ſeveral other favours, by which means he became exceeding rich, having almoſt one thouſand pounds per annum, a vaſt eſtate for thoſe times. He ſided with the duke of Lancaſter, the chief inſtrument of his riſe, and eſpouſed the party of Wickliffe, when ſome commotions being raiſed in the city of London, he was obliged to fly to Hainault, whence his neceſſities forced him to return to England, where he was ſeized by the king's order, and impriſoned: but at laſt he made a frank confeſſion of the whole affair, which procured him his pardon. He did not for ſome time recover the ſhock which this gave him; and his circumſtances being reduced to the loweſt degree of poverty, and his intereſt at court ruined, he retired to Woodſtock, to enjoy the calm pleaſures of a ſtudious ſafety; but the duke of Lancaſter at laſt ſurmounting his troubles, and marrying Chaucer's wife's ſiſter, our poet's ſon became allied to moſt of the nobility, and to ſeveral of the kings of England, for he had ſome grants conferred upon him by the king, but was deprived of them again at the Revolution in favour of Henry IV. ſon of the duke of Lancaſter; but while he was endeavouring to recover freſh grants, he died, on the 25th of October, 1400. The moſt admired of his poems are, his Knight's Tale, and his Canterbury Tales.

CHECK, or CHECK-ROLL, a roll or book, wherein is contained the names of ſuch perſons as are attendants and in pay to the king, or other great perſonages, as the houſhold ſervants.

Clerk of the CHECK, in the king's houſhold, has the check and controulment of the yeomen of the guard, and all the uſhers belonging to the royal family, allowing their abſence or defects in attendance, or diminiſhing their wages for the ſame, &c. He alſo takes the view of thoſe that are to watch in the court, and has the ſetting of the watch, &c.

Clerk of the CHECK, in the king's navy, the name of an officer inveſted with the like power at the ſeveral dock-yards.

CHECKY, in heraldry, is when the ſhield, or a part, as a bordure, &c. is chequered, or divided into chequers or ſquares, in the manner of a cheſs-board. This is one of the moſt noble and ancient figures uſed in armory, and ought to be given to none but great warriors, in token of their bravery; for the cheſs-board repreſents a field of battle, and the pawns of men, placed on both ſides, repreſent the ſoldiers of the two armies, which move, attack, advance, or retire, according to the will of the two gameſters, who are the generals.

CHEEK, in anatomy, that part of the face ſituated below the eyes, on each ſide. Wounds of the cheeks, if ſmall, may be cured by the dry ſuture; but if large, the bloody one muſt be uſed. See SUTURE.

CHEESE, *Caſeus*, a ſort of food, prepeared of curdled milk, purged from the ſerum or whey, and afterwards dried for uſe. Phyſicians condemn the too free uſe of cheeſe, as it loads the ſtomach when new, and heats and inflames when old. Every country has its place noted for this commodity. Thus Cheſhire and Glouceſterſhire cheeſe are famous in England; and the Parmeſan cheeſe is in no leſs repute abroad, eſpecially in France. This ſort of cheeſe is entirely made of ſweet cow's milk: but at Rochfort, in Languedoc, they make cheeſe of ewe's milk; and in other places, it is uſual to add goat or ewe's milk, in a certain proportion, to that of cow's.

There is likewiſe a kind of medicated cheeſe, made by intimately mixing the expreſſed juice of certain herbs, as ſage, baum, mint, &c. with the churd, before it is faſhioned into a cheeſe.

CHELIDONIUM *Majus*, celandine, in botany, a perennial plant, which grows wild in hedges and ſhady waſte places, and flowers in May. It is a very acrid plant, and ſtands recommended as a powerful aperient and attenuant, in obſtinate jaundices, when not accompanied with inflammatory ſymptoms; in cachexies, chloroſes, dropſies, and other diſeaſes.

CHELIDONIUM *Minus*, pilewort, in botany, a ſmall perennial plant, which grows wild in hedges and moiſt meadows, and flowers in April. The leaves of pilewort are ranked among the antiſcorbutics, but do not promiſe to be of much virtue. The roots are celebrated as a ſpecific againſt the piles: they have been ſometimes given inwardly, but chiefly applied externally, in the form of a cataplaſm, lotion, or unguent.

CHEMIN DES RONDES, in fortification, a ſpace between the rampart and low parapet under it, for the rounds to go about the ſame.

CHEMISE, in fortification, the wall with which a baſtion, or any other bulwark of earth, is lined for its greater ſupport and ſtrength: or it is the ſolidity

dity of the wall, from the talus to the ſtone row.

Fire CHEMISE, a piece of linen cloth, ſteeped in a compoſition of oil of petrol, camphor, and other combuſtible matters, uſed at ſea, to ſet fire to an enemy's veſſels.

CHEMICAL *Laboratory*, or *Elaboratory*, the place where chemical proceſſes are performed.

CHEMISTRY, an art that teaches us how to perform certain phyſical operations, by which bodies that are diſcernable by the ſenſes, or that may be rendered ſo, and that are capable of being contained in veſſels, may, by ſuitable inſtruments, be ſo changed, that particular determined effects may be thence produced, and the cauſes of theſe effects underſtood by the effects themſelves, to the manifold improvement of various arts.

If we endeavour to find the origin of this art, we muſt look back into the antediluvian world, where it was practiſed, as ſome think, by Cham, the ſon of Noah; but the invention is more commonly aſcribed to Tubal-Cain, who firſt prepared braſs and iron for the uſe of man, which he could not have done without a competent knowledge of chemiſtry. At the declenſion of the Eaſtern empire, chemiſtry ſhared the common fate of the other arts, and lay buried and neglected till the time of our friar Bacon, by whom it was in a great meaſure retrieved. He was followed by Raymund Lully, Baſil Valentine, Paracelſus, Van Helmont, and others, who ſpread the art in Spain, Italy, and Germany; and the two laſt eſpecially carried it to ſuch a length, as to render medicine almoſt wholly chemical. Limery a Frenchman, Homberg an Eaſt-Indian, and our ingenious countryman Mr. Boyle, diſperſed the darkneſs of the art, reducing it to ſimple and true ideas, and aboliſhing thoſe uſeleſs and impracticable circumſtances, with which ſome of their predeceſſors had deſignedly clogged its operaitons. But of all the moderns none have made greater improvements in chemiſtry, or more judiciouſly and beneficially introduced it into medicine, than the late celebrated Boerhaave, who is alſo the fulleſt and beſt writer on the ſubject, having given us the hiſtory, theory, and practice of this noble art in an orderly and ſcientifical manner.

CHERRY-TREE, *Ceraſus*, in botany. See CERASUS.

CHETT, among miners, a kind of flinty ſtone, found in thin ſtrata in quarries of lime-ſtone.

CHERUB, or CHERUBIN, a celeſtial ſpirit, which hierachy is placed next to the ſeraphim. See HIERARCHA.

The ſeveral deſcriptions which the Scripture gives us the cherubins, differ rrom one another: but all agree in repreſenting a figure compoſed of various creatures, as a man, an ox, an eagle, and a lion.

CHERVIL, *Chærophyllum*, in botany. See CHÆROPHYLLIUM.

* CHESHIRE, a county of England, is bounded on the north by Lancaſhire, from which it is parted by the river Merſey; on the north-eaſt corner by Yorkſhire, on the eaſt by Staffordſhire and Derbyſhire, on the ſouth by Shropſhire and the river Dee, on the weſt by Denbighſhire and Flintſhire, and on the north-weſt by St. George's Channel, where it forms a kind of peninſula. It is forty-five miles in length, and twenty-five in breadth, contain eleven market towns, beſides Cheſter; one hundred and twenty-five pariſhes and villages, whereof eighty-ſeven only have churches; the reſt are chapelries. The market-towns are Nantwich, Middlewich, Northwich, Macclesfield, Congleton, Frodſham, Stockport, Sandbich, Altringham, Malpas, and Knotsford. It is a county palatine, and ſtill enjoys ſome of its ancient privileges, it having the palatine courts for the adminiſtration of juſtice kept at Cheſter. It ſends four members to parliament, two for the county, and two for the city. The rivers are the Dee, which riſing from two mountains in North Wales, firſt runs eaſt, and then north to Cheſter, and from thence proceeds to the ſea. The Weaver riſes in Shropſhire, and falls in the æſtuary of Merſey. The Merſey is the northern boundery of the county, and falls into the ſea. The Dee abounds with ſalmon and trouts. The air of this county is healthy, and the country level, except on the borders of Staffordſhire and Derbyſhire, where it is hilly. The ſoil is generally fruitful, and the farmers keep it in heart by manuring it with marl, of which they have two ſorts, white and red. The vaſt quantity of cheeſe made in this county, is a proof that there is a great deal of paſture land, wherein they keep their cows. There are likewiſe meres, lakes, and pools, in which there are carp, tench, bream, eels, &c.

The chief commodities are cheeſe, ſalt, and mill-ſtones. The ſalt is made from the water of ſalt-ſprings, at the Witches.

CHESNUT-TREE. See CASTANEA.

CHEST, in commerce, a kind of meaſure, containing an uncertain quantity of ſeveral commodities.

A cheſt of ſugar, v. g. contains from ten to fifteen hundred weight; a cheſt of glaſs, from two hundred to three hundred feet; a cheſt of Caſtile ſope, from two and a half to three hundred weight; of indigo, from one and an half to two hundred weight, five ſcore and twelve pounds to the hundred.

CHEST, in anatomy, the breaſt, or that part of the body which contains the heart and lungs. See BREAST.

* CHESTER, the capital city of Cheſhire, is of a quadrangular form, and is ſurrounded with a wall, with four gates towards the four cardinal points. It is about two miles in compaſs, and contains nine pariſh churches, beſides the cathedral. The caſtle ſtands on the ſouth ſide of the city, and is a noble and ſtately building, having a tower bearing the name of Julius Cæſar, and a hall where the palatine court and aſſizes are kept, twice a year, with commodious rooms for the reception and lodging of the judges of aſſize; as alſo a convenient hall for the princes exchequer court. The principal ſtreets are adorned with piazzas, or rows, as the inhabitants call them, under which there are ſhops, and through which one may walk dry in rainy weather. The city is governed by a mayor, two ſheriffs, twenty-four aldermen, a town-clerk, &c. and ſends two members to parliament. It has two markets, on Wedneſdays and Saturdays, and three fairs, one on the laſt Thurſday in February, for cattle; and the other two on July 5, and October 10, for Iriſh linen cloth, hardware, drapery goods, Mancheſter manufactures, hops, and cattle. This city and Holyhead are the two great thoroughfares for Ireland. It is one hundred and eighty-two miles north-weſt from London. Long. 3. 0. W. Lat. 53. 11. N.

CHEVALIER, in a general ſenſe, ſignifies a knight, or horſeman: but

CHEVALIER, in heraldry, ſignifies any cavalier, or horſeman, armed at all points.

CHEVAUX DE FRISE, in fortification, a large joiſt or piece of timber, about a foot in diameter, and ten or twelve feet in length; into the ſides whereof are driven a great number of wooden pins, about ſix foot long, armed with iron points, and croſſing one another. See plate XII. fig. 5.

The chief uſe of the chevaux de friſe, is to ſtop up breaches, or to ſecure the avenues of a camp, from the inroads both of horſe and foot. It is ſometimes alſo mounted on wheels, with artificial fires, to roll down in an aſſault.

CHEVRETTE, in the art of war, an engine for raiſing guns or mortars into their carriages.

CHEVRON, or CHEVERON, in heraldry, one of the honourable ordinaries of a ſhield, repreſenting two rafters on an houſe, joined together as they ought to ſtand: it was anciently the form of the prieſteſſes head attire: ſome ſay it is a ſymbol of protection; others, of conſtancy; others, that it repreſents knights ſpears, &c.

CHIAN EARTH, in pharmacy, one of the medicinal earths of the ancients, of which nothing more than the name has been known for many ages in the ſhops.

CHICANE, or CHICANRY, in law, an abuſe of judiciary proceedings, tending to delay the cauſe, to puzzle the judge, or impoſe upon the parties.

CHICANE, in the ſchools, ſophiſms, diſtinctions, and ſubtleties, which protract diſputes and obſcure the truth.

CHICHES, or CAICH-PEASE. See CICER.

* CHICHESTER, the capital city of Suſſex, is ſurrounded with a wall, with four gates, anſwering to the four cardinal points. The ſpace between the weſt and ſouth gates is taken up with the cathedral church and the biſhop's palace. The church itſelf is not large, but neat, and has a high ſpire of good workmanſhip. It has five pariſh churches, and is ſeated on the little river Lavant, which waſhes it on all ſides except the north. This city had a caſtle, which was afterwards converted into a monaſtery, which is now demoliſhed. It is governed by a mayor, recorder, fourteen aldermen, and a common council, and four juſtices of the peace choſen out of the aldermen. It has two weekly markets, on Wedneſdays and Saturdays; and every other Wedneſday there is a market for cattle. It has five fairs, thoſe on May 3, Whit-Monday, and Auguſt 5, are for horſes and horned cattle; that on October 10, for horned cattle; and that on October 20, for horſes and horned cattle. It ſends two members to parliament, and is famous for lobſters. It is ſixty-three miles ſouth weſt of London; and eighty-one ſouth-

by-eaſt of Oxford. Long. 0. 59. W. Lat. 50. 50. N.

CHICK, or CHICKEN, in zoology, the young of the gallinaceous order of birds, eſpecially the common hen.

Chickens, for two days after hatching, require no meat; but then it is proper to give them, for the firſt time, ſmall oatmeal, ſome dry and ſome ſteeped in milk, or elſe fine white-bread crumbs; and after they have got ſtrength, curds, cheeſe pairing, &c. It is alſo very wholeſome to chop green chives among their meat, which will preſerve them from the rye, and other diſeaſes in the head; neither muſt they at any time be ſuffered to want clean water, ſince puddle-water is apt to breed the pip.

CHICK-WEED, *Alſine*, in botany. See Alsine.

CHIEF, the head or principal part of a thing or perſon. Thus we ſay, the chief of a party, the chief of a family, &c.

CHIEF, in heraldry, that which takes up all the upper-part of the eſcutcheon from ſide to ſide, and repreſents a man's head.

In CHIEF, imports ſomething borne in the chief part or top of the eſcutcheon.

CHILBLAINS, in medicine, the ſame with what is otherwiſe called perniones See Perino.

CHILD, a term of relation to a patern.

Dr. Harris, in a treatiſe of the acute diſeaſes of children, takes them all to ariſe from the humours of the primæ viæ growing ſour and degenerating into acidities, which is confirmed from their ſour belching and dejections. Hence all that is required to cure them is to combat this acidity, which is to be effected two ways; by diſpoſing it to be evacuating, and by actual evacuation by rhubarb, and other gentle purgatives. In the firſt caſe, no ſudorifics or cordials are to be uſed, but in lieu of them, crabs-eyes and claws, oyſter-ſhells, egg-ſhells, chalk, coral, &c. but above all theſe, he prefers old ſhells that have lain long on the ſea ſhore expoſed to the heat of the ſun. Children are very obnoxious to the aphthæ, or thruſh, ſcabby eruptions, difficult dentition, epilepſy, worms, and rickets; for the cure of which, ſee each of theſe under its proper head. See alſo the articles Infant, Nursing, Weaning, &c.

CHILDERMAS-DAY, or INNOCENT'S-DAY, an anniverſary held by the church, on the 28th of December, in commemoration of the children at Bethlehem, maſſacred by order of Herod.

* CHIMERA, or CHIMÆRA, a fabulous monſter which the poets feign to have the head of a lion, the body of a goat, and the tail of a dragon; and add, that this odd beaſt was killed by Bellerophon. The foundation of the fable was, that in Lycia there was a burning mountain, or vulcano, of this name; that the top of this mountain was ſeldom without lions, nor the middle, which had very good graſs, without goats; that ſerpents bred at the bottom, which was marſhy; and that Bellerophon rendered the mountain habitable. By a chimera, among the philoſophers, is underſtood a mere creature of the imagination, compoſed of ſuch contradictions and abſurdities as cannot poſſibly any where exiſt but in thought.

CHIMES *of a Clock*, a kind of periodical muſic, produced at equal intervals of time, by means of a particular apparatus added to a clock.

CHIMNEY, in architecture, a part of a houſe, where the fire is made, having a funnel to carry away the ſmoke.

The proportion for CHIMNIES. Wolfius directs that the breadth of the aperture at the bottom be to the height as 3 to 2, and to the depth as 4 to 2. In ſmall apartments the breadth is 3 feet, in bedchambers 4, in larger apartments 5, in ſmall banquetting rooms 5 1-half, in larger 6; but the height ſhould never exceed 2 1-half, leſt there ſhould be too much room for air and wind, and the ſmoke be driven into the room: nor muſt the height be too little, leſt the ſmoke miſs its way and be choaked at firſt ſetting out. The ſame author adviſes to have an aperture through which the external air may, on occaſion, be let into the funnel, to drive up the ſmoke, which the internal air would otherwiſe be unable to do.

Some make the funnel twiſted, to prevent the ſmoke's deſcending too eaſily; but the better expedient is, to make the funnel narrower at bottom than at top, the fire impelling it up more eaſily, when contracted at the bottom; and in mounting it finds more ſpace to diſengage itſelf, and therefore will have leſs occaſion to return into the room.

To prevent ſmoking chimnies, Mr. Lucas adviſes to leave two holes, or make two pipes in the chimnies, one over the other on each ſide, one ſloping upwards, the other downwards; through theſe holes or pipes, ſays he, the ſmoke will eaſily paſs out of any funnel, which way ſoever the wind blows.

CHIMNEY-MONEY, or HEARTH-MONEY, a tax impoſed by ſtatute 24 Car. II. expreſſing that every fire-hearth and ſtove of every dwelling or other houſe within England and Wales, except ſuch as pay not to church and poor, ſhall be chargeable with two ſhillings per annum, payable at Michaelmas and Lady-Day, to the king and his heirs. This tax being much complained of, as burdenſome to the people, has been aboliſhed, and inſtead of it the window-tax was granted.

CHIMNEY-PIECE, a compoſition of certain mouldings of wood or ſtone, ſtanding on the fore-ſide of the jambs, and coming over the mantle-tree.

* CHINA, including Chineſe Tartary, a large empire, ſituated between 95° and 135° eaſt longitude, and between 21° and 55° north latitude, being accounted two thouſand miles in length, and one thouſand five hundred in breadth; it is bounded by Ruſſian Tartary on the north, by the Pacific ocean on the eaſt and ſouth, and by Tonquin, Tibet, and the territories of Ruſſia on the weſt. It is uſually divided into ſixteen provinces there are computed to be one hundred and fifty-five capital cities, one thouſand three hundred and twelve of the ſecond rank, two thouſand three hundred and fifty-ſeven fortified towns, and upwards of ten millions of families, which may amount to about fifty millions of people.

The principal commodities of this country are ſilk, tea, china-ware, japan-ware, and gold-duſt; of all which the maritime ſtates of Europe import great quantities, ſending them ſilver in return.

CHINA-ROOT, in the materia medica, a drug, of which there are two kinds, oriental and occidental. The two plants differ little or nothing in the leaves, flowers, or ſeeds, but conſiderably in the root, and remarkably in the time of flowering; the Chineſe blowing only in June and July, whilſt the American produces flowers ſucceſſively almoſt all the year.

Decoctions of this root drank freely, are ſaid to promote perſpiration and urine, and have been greatly recommended in the venereal diſeaſe: they do not appear however, to have any conſiderable virtue.

CHINA-WARE, or *Porcelain*, a kind of ware well known in moſt parts of the world.

The qualities of China ware, when perfectly good, are, to be very white and tenacious, ſo as not only to bear violence without breaking, and ſtrike fire with the ſteel as flint; but to ſuffer boiling water to be poured on it, while it is itſelf in a cold ſtate, without being broken or cracked: to have a ſemi-tranſparent appearance; to break without ſhewing any grain in the divided parts, but ſeeming to have in them the even texture of glaſs; to ſhine on the exterior ſurface, as if a bright poliſh had been given to it: to be completely fit, while the compoſition is in the ſtate of a moiſt paſte, before it be dried or baked, to be modelled or caſt with the greateſt nicety and minuteneſs, retaining the figure, though wrought into the moſt thin and ſlender parts; to dry afterwards without warping; and to undergo at laſt the baking or burning, without any ſeparation of the parts or flawing. If the compoſition, or the ware formed of it, be deficient in any of theſe particulars, they are ſo far faulty: and by examining any pieces of China with regard to thoſe particulars, which relate to the finiſhed ware, the comparitive or abſolute goodneſs may be eaſily diſtinguiſhed.

The baking or burning China ware is performed much in the ſame manner, as is practiſed by the potters for earthen-ware; except that it is done with more care; and that ſome expedients are uſed for defending the pieces from the injury of the ſmoke or duſt of the furnace, which would deprave the colour, or infect the ſurface with ſpecks.

The glazing the ware of this kind is a very important part of the manufacture of it; and has been generally found the moſt difficult to be performed. It is done by ſpreading ſome ſoft glaſs powdered, or ſome fluxing compoſition, (either mixed with part of the matter, of which the ware itſelf is formed, or in ſome caſes without) on the ſurface of the pieces; and melting it there, ſo as when cold to make an entire covering with the ſmoothneſs and ſhining appearance of glaſs. As the compoſition of the glazing has been generally kept a ſecret by thoſe who have the direction, almoſt every different manufactory have employed one peculiar to themſelves; and few have ſucceeded in forming ſuch as will well anſwer the end; as may be ſeen by examining the ware produced, even by the naked eye, but more diſtinctly with the aſſiſtance of a glaſs that magnifies largely; through which the ſurface

face will appear covered with, as it were, a net-work of an infinite number of cracks, (ſome of them frequently not ſmall) that not only impair the poliſh, but give moreover a caſt of greyneſs to the colour.

Compoſition for CHINA-WARE. The compoſition of the eaſtern or proper China-ware is from two earths; one of which is, vitreſcent, and is called petunſe; the other a refractory, or apyrous earth, and called kaolin.

Whether the earth, called petunſe, is formed of the ſpar of lead, (as it is improperly called) uſed in the Dreſden manufactory, or whether of flints, or ſome ſpecies of ſand, (for experience has ſhewn they will all anſwer the end, when they have no tinging matter in them, and will calcine to whiteneſs) is not evident from any information hitherto brought to this part of the world. But the deſcription given of it is, that it is a very hard whitiſh ſtone, or of a grey inclining to the green.

The following compoſition will produce wares which will have the property of the true china.

“ Take of the beſt white ſand, or calcined flints finely powdered, twenty pounds; add to it of very white pearl-aſhes five pounds, of bones calcined to perfect whiteneſs two pounds; temper the whole with gum water, formed by diſſolving the gums arabic or ſenegal in water.

This requires a conſiderable force and continuance of heat to bring it to perfection; but will be very white and good when it is properly treated. Where mica can be obtained, it is preferable to the calcined bones; and as it will form a paſte of kindly texture for working, a weaker gum-water will ſerve; the neceſſity of uſing which at all, in this kind of compoſitions, is occaſioned only by the want of proper coheſion and tenacity in the paſte, which ſuch mixtures make.

“ Take of the beſt white ſand, or calcined flints finely powdered, twenty pounds; of very white tobacco-pipe clay, or the Corniſh ſope rock clay waſhed over, five pounds; and of the whiteſt pearl-aſhes, four pounds: temper them with a weak gum-water.” Or,

“ Take of the whiteſt ſand, or calcined flints finely powdered, twenty pounds; of flint, or any other colourleſs glaſs, powdered alſo, ten pounds; and of mica, or calcined bones, two pounds: temper them with gum-water ſufficiently ſtrong, to give them a due coheſion.”

There have been ſeveral ſimiliar compoſitions uſed for the imitation of China-ware in the works ſet on foot in different parts of Europe. The works at Dreſden, and St. Vincennes in France may, be eſteemed the only manufactories in Europe, advanced as yet to any degree of perfection; though there are no particular advantages in the ſituation of either of them, that give them any claim to the monopolizing this art: and we may, therefore, hope to ſee ourſelves in time as much maſters of this as of all the other manufactures duly cultivated and encouraged with us.

Manner of Formation of Veſſels, Figures, Flowers, or other Pieces of CHINA-WARE. The various kinds of pieces of China-ware are formed by three methods, turning, caſting, and modelling: the particular manner of doing which being the ſame in this caſe as in others, there will be little occaſion to be explicit with regard to it. Larger veſſels are generally turned in the ſame manner as is practiſed by the potters for ſtone or earthen ware: but where they are intended to be of very nice and accurate figure, after they have the general form given to them, they are finiſhed by putting them into proper moulds.

Figures, as alſo pieces, or ornaments of pieces, of the nature of baſs relief, are commonly caſt in moulds, which is done in the ſame way as plaſter of Paris is treated for which directions will be found under the article CASTING. But ſome detached parts of ornaments, where no great preciſion of form is required, may be beſt modelled or worked by the hand.

Flowers, and other ſuch looſe deſigns, where latitude may be given to the fancy, are alſo moſt commodiouſly modelled or wrought with the hand, with the help of a ſmall ſtick flattened at the point, a pair of pliers, and a wet ſponge.

Where the parts of the pieces are very ſlender and thin, as particularly in the caſe of flowers, if the paſte be not of itſelf of a very tenacious conſiſtence, it ſhould always be brought to a proper ſtate of coheſion, by tempering it with gum-water: for the want of knowing which expedient, we have ſeen very coarſe work done with great labour, and ſubject to frequent miſcarriages, where the whole difficulty might have been eaſily ſurmounted by this means.

As to the baking, glazing, painting, and gilding of china-ware, it would be but to little purpoſe, to be particular here, or to add any thing to what hath been already obſerved on that head, as thoſe who want to be thoroughly acquainted therewith, muſt have

have recourſe to other methods, and fuller accounts than this work can admit of.

CHIN-COUGH, a convulſive kind of cough, which children are ſubject to, proceeding from a tough, viſcid, and acid matter, lodged in the coats of the ſtomach, which when they vomit, they are eaſy for a time. Sometimes this diſorder proceeds from a more dangerous cauſe, which is a certain ſalt communicated to tender bodies by means of the air, which coagulates the lymph, and, which growing ſharp and ſtagnating, affects the latynx. In the cure of this cough, particular care ſhould be had to the ſtomach; and without a vomit the cure can hardly be effected. Spermaceti in broth is of excellent uſe: but by bleedings and repeated purges this cough may be cured, without other means: yet the milder cathartics ought here to take place. Drinks and liquid aliments ſhould alſo be taken in leſs quantity than uſual.

CHINESE, belonging to the empire of China, or its inhabitants.

CHINESE *Philoſophy*. Though the Chineſe are univerſally allowed to have ſurpaſſed all other nations of India, in their antiquity, learning, politeneſs, the improvement of the ſciences, a taſte for philoſophy, and their political principles: yet it is certain, notwithſtanding their extravagant pretenſions, vaunts, and ſelf-conceit, that their advances in learning and polite arts and ſciences were, upon the whole, when the miſſionaries firſt viſited that empire, not only greatly inferior to thoſe of the politer modern chriſtian nations of Europe, but even to many of the ancient pagan nations, particularly the Greeks and Romans; nay even, at this day, neither their knowledge, nor manners, are comparable to thoſe of the Europeans, the former, in general, being very ſuperficial, and the latter extremely corrupt; for if we may judge of the reſt of the Chineſe by thoſe of Canton, they are much addicted to unnatural vices, to diſſimulation, treachery, and hipocriſy, and to cheating, and over-reaching, in conſequence of their covetouſneſs; but in ſpeaking of their manners, it ought always to be conſidered, that they are ſtill Pagans and idolaters, the ſect Ju-kiao dividing at preſent the whole empire with the ſects Foe-kiao and Lao-kiao, which are in truth no other than three different combinations of ſuperſtition, idolatry, polytheiſm, and atheiſm.

The ſingular eſteem with which they honoured the firſt Europeans who travelled into China, give us no very high idea of their ſkill in mechanics, aſtronomy, and other parts of the mathematics. Theſe Europeans were not men of any diſtinguiſhed merit, but ſuch whom zeal carried thither, to propagate the Chriſtian religion at the hazard of their lives, in unknown regions, which indeed befel ſome of their ſucceſſors. They were well received by the Chineſe; ſuperſtition, apt to take offence and be alarmed, gave them no oppoſition; they opened ſchools, had many diſciples, and their learning was admired. The emperor Cham-hy about the end of the laſt century admitted them at court, learned our philoſophy and ſciences of them, ſtudied mathematics, anatomy, aſtronomy, mechanics, &c. but his ſon Yong-Tching baniſhed all the European virtuoſi to Canton and Macao, except thoſe that reſided in Pekin, who were ſuffered to continue in that city. Kien-Long, the ſon of Yong-Tching, ſhewed a little more indulgence to the learned of Europe; but forbad them to preach the Chriſtian religion, and even perſecuted his ſoldiers who had embraced it; though at the ſame time he permitted the Jeſuits to continue their inſtructions at Pekin.

CHIO-PEAR, the name of a ſpecies of pear, of a yellowiſh colour, and ſtreaked with red.

CHIONANTHUS, ſnow-drop-tree, in botany, a genus of plants.

CHIRAGRA, in medicine, a term uſed to denote the gout in the hand or wriſt. See GOUT.

CHIROMANCY, a ſpecies of divination, drawn from the different lines of a perſon's hand; by which means, it is pretended, the inclinations may be diſcovered.

* CHIRON, in fabulous hiſtory, a centaur, the ſon of Saturn and Phillyris, who lived in the mountains, and delighted in hunting; where obtaining the knowledge of the virtues of plants, he became one of the greateſt phyſicians of his time. He taught this ſcience to Eſculapius, and afterwards became governor to Achilles, whom he fed with the marrow of lions and wild boars, in order to render him ſtrong and courageous. But being wounded by Hercules with an arrow, which he dropt accidentally upon his foot, he begged of the gods to put an end to his life, on which Jupiter placed him in the heavens, where he forms one of the ſigns of the zodiac, under the name of Sagittarius.

CHIRURGERY, or SURGERY, that part of medicine which is employed in manual operations. Chirurgery is undoubtedly very ancient, but its inventor is very uncertain. In the days of Hippocrates, ſurgery was ſo connected with medicine, that the former was ſcarce diſtinguiſhed from the latter by any peculiar and diſcriminating name: and that Hippocrates himſelf aſſiſted the ſick by manual operation, is a fact which cannot be called in queſtion. During theſe laſt fifty years, ſurgery has been cultivated with very great ſucceſs. M. le Dran has furniſhed us with inſtructions which will inform the moſt ſkilful proficients. M. de la Faye, the ingenious commentator on Dionis, has likewiſe given us, in his notes, not only what his own experience and reflections have ſuggeſted, but alſo, as he ſays, the opinions and obſervations of the greateſt ſurgeons at Paris; and, indeed, the frequent mention he makes of Meſſ. Morand, Petit, de la Peyronie, and others, are ſufficient proofs that his comments are an exact repreſentation of the preſent ſtate of ſurgery in France. Heiſter's ſurgery is in every perſon's hands; and the character of Heiſter is ſo well eſtabliſhed, that any account of that work is needleſs. Nor need we mention the treatiſe of ſurgery, and critical enquiry, of the ingenious Mr. Sharpe, ſince the name of the author is abundantly ſufficient. Mr. Pott is alſo an honour to his country and profeſſion.

CHISLEY-LAND, in agriculture, a ſoil of a middle nature, between ſandy and clayey land, with a large admixture of pebbles.

CHISSEL, an inſtrument uſed in carpentry, maſonry, joinery, ſculpture, &c. and diſtinguiſhed according to the breadth of the blade into half-inch chiſſels, quarter-inch chiſſels, &c. They have alſo different names according to the different to which they are applied.

CHIVALRY, in law, a tenure of ſervice, whereby the tenant is bound to perform ſome noble or military office to his lord; and is either regal, when held only of the king; or common, ſuch as may be held of a common perſon as well as the king: the former is properly called ſerjeantry, and the latter eſcuage. See SERJEANTRY and ESCUAGE.

A ſtatute of Charles II. aboliſhes all tenures by chivalry, in capite, &c. and ordains that all tenures ſhall be conſtrued to be free and common ſoccage.

CHIVES, among gardeners, the ſame with the antheræ or apices See ANTHERÆ.

CHIVES is alſo the Engliſh name of a very ſmall ſpecies of onion. See ONION.

CHLOROSIS, in medicine, a diſeaſe uſually called the green ſickneſs, incident to girls, maids, widows, and even wives whoſe huſbands are deficient. Various are the ſymptoms of this diſorder, as a feveriſh habit of body, vomiting, difficulty of breathing, and longing for unnatural foods. As to the cure, Aſtruc recommends borax, mineral-waters, electuaries made of preparations of ſteel, the martial flowers, &c. aſafœtida, aloes and myrrh, emollient baths, frequent evacuations, and exerciſe; but above all, matrimony.

CHOCOLATE, a kind of paſte, or cake, prepared of certain drugs, the baſis of which is the cacao-nut.

The Indians, in their firſt making of chocolate, uſed to roaſt the cacao in earthen pots, and having afterwards cleared it of the huſks, and bruiſed it between two ſtones, they make it into cakes with their hands. The Spaniards improved this method: when the cacao is properly roaſted, and well cleanſed, they pound it in an iron mortar, to reduce it into a coarſe maſs, which they afterwards grind, or levigate, on a ſtone, under which a charcoal fire is kept, till it be of the utmoſt fineneſs: when the paſte is ſufficiently ground, it is put quite hot into tin moulds, in which it congeals in a very ſhort time. The form of theſe moulds is arbitrary; the parallelogramic ones, holding about a quarter of a pound, are the moſt proper, becauſe the bigger the cakes are, the longer they will keep. Obſerve that theſe cakes are very liable to take any good or bad ſcent, and therefore they muſt be carefully wrapt up in paper, and kept in a dry place. Complaints are made, that the Spaniards mix with the cacao-nuts too great a quantity of cloves and cinnamon, beſides other drugs without number, as muſk, ambergriſe, &c. The grocers of Paris uſe few or none of theſe ingredients; they only chooſe the beſt nuts, which are called Caracca, from the place where they are produced, and with theſe they mix a very ſmall quantity of cinnamon, the freſheſt vanilla, and the fineſt ſugar, but very ſeldom any cloves. Among us in England, the chocolate is made of the ſimple cacao, excepting that ſometimes ſugar and ſometimes vanilla is added.

CHOIR, that part of the church where choiriſters ſing divine ſervice: it is ſeparated from the chancel, where the communion is celebrated; and alſo from the nave of the church, where the people are placed: the patron is ſaid to be obliged to repair the choir of the church.

CHOIR, in nunneries, a large hall adjoining to the body of the church, ſeparated by a grate, where the nuns ſing the office.

CHOLAGOGUES, medicines which purge the bile.

Of this kind are manna, caſſia, roſes, ſena, rhubarb, aloes, jalap, ſcammony, &c. There is ſome reaſon to think that antimonial medicines act more powerfully on the bile than any other remedies.

CHOLER, or BILE. See Bile.

CHOLERA-MORBUS, in medicine, the ſame with bilious fever. See Bilious.

CHOMELIA, in botany, a genus of plants.

CHONDRILLA, in botany, a genus of plants.

CHONDROGLOSSUM, in anatomy, the name of a pair of muſcles, ariſing from the cartilaginous proceſs of the os hyoides, and meeting in the baſe of the tongue, where they are inſerted: this pair is not found in all ſubjects.

CHONDROPTERYGII, in ichthyology, one of the five orders or ſubdiviſions of fiſhes, the characters of which are theſe: the rays of the fins are cartilaginous, differing in little from the membrane that conſtitutes the fin; they have likewiſe cartilages inſtead of bones; and the mouth is for the moſt part ſituated in the lower part of the body.

CHORD, in geometry, a right-line connecting the extremities of any arch of a circle.

Line of CHORDS, the chords of a circle projected on a right-line. See *Plane* Scale.

CHORDS, in muſic, the ſtrings or lines, by whoſe vibrations the ſenſation of ſound is excited, and by whoſe diviſions the ſeveral degrees of tune are determined. The ſtrings of muſical inſtruments are generally made of guts, though others are made of braſs, or iron wire, as thoſe of ſpinnets, harpſichords, &c. Chords of gold wire, in harpſichords, yield a ſound almoſt twice as ſtrong as thoſe of braſs: chords or ſtrings of ſteel yield a feebler ſound than thoſe of braſs, as being leſs heavy and leſs ductile. The tone of a ſound depends on the time or duration, of the ſtroke made on the drum of the ear, by a wave or pulſe of air; for as that is longer or ſhorter, the tone will be more grave or acute: and ſince all pulſes move equally ſwift, the duration of a ſtroke will be proportional to the interval between the two ſucceſſive pulſes; and conſequently a ſound is more or leſs grave or acute, in proportion to the length of that interval.

Hence it follows, that all the ſounds, from the loudeſt to the loweſt, which are excited by the vibrations of the ſame body, are of one tone. It likewiſe follows, that all thoſe bodies, whoſe parts perform their vibrations in the ſame or equal times, have the ſame tone: alſo thoſe bodies which vibrate ſloweſt have the graveſt and deepeſt tone, as thoſe which vibrate quickeſt have the ſharpeſt or ſhrilleſt tone.

The number of vibrations made by different chords in equal times, and upon which their tone depends, may be determined in the following manner: Where B A C (plate XII. fig. 6.) repreſents the figure which a muſical chord aſſumes in its ſmall vibrations; then, as the tenſion of the chord is every where equal, let P repreſent this tenſion, or a weight equal to it, *n* a ſection of the chord perpendicular to its length; V the force by which the motion of any point at M towards A C is accelerated, while the chord returns to its natural ſtate in the circumference of a circle, whoſe diameter is 1. Biſect B C in S, and draw S A perpendicular to B. C; from any point in S A, as G, drawn Q M parallel to B C, and M N parallel to S A; this done, we ſhall have $V = \frac{m^2P}{n} \times \frac{\overline{SQ}^2}{4SB^2}$. See the article Elastic *Curve*. If we now ſuppoſe N to repeſent the weight of the chord, L its length, *g* the force of gravity, D the length of a given pendulum, $SA = a$, SQ or $MN = y$; then, becauſe $N = ngL$, or $n = \frac{N}{Lg}$ and $L = 2SB$, it follows that

$$V = \frac{m2gyP}{NL}.$$

Becauſe V is as *y*, the diſtance of M from A C, the vibrations of the chord are ſimilar to thoſe of a pendulum; and the time in which M deſcribes M N, is to the time in which the pendulum D performs half a vibration, as

$$\sqrt{\frac{y}{V}} : \sqrt{\frac{D}{g}} \text{ or as } \frac{\sqrt{LN}}{m\sqrt{P}} \text{ to } \sqrt{D};$$

conſequently the number of vibrations made by the chord, while the pendulum vibrates one, is expreſſed by $m \times \sqrt{\frac{DP}{LN}}$, which ſerves for determining the number of vibrations made in a given time by any given chord that is extended by a given weight; or for comparing the number of vibrations by different chords in equal times. Thus if the weight P be the ſame, the number of vibrations is as $\frac{1}{\sqrt{LN}}$; and when the chords are of the ſame kind (or N is at L) the vibrations are as $\frac{1}{L}$. If the chord be given, the number of vibrations is as $\sqrt{P}$. The ratio of m to 1, or of the circumference to the diameter, enters the expreſſion of the vibrations of the chord; and there ſeems to be a difference in this reſpect betwixt the theorems by which the vibrations of a muſical chord, and thoſe which are produced in the air by organ-pipes, or other wind-inſtruments, are to be determined; in theſe, where the ſound is made by the vibration of a column of elaſtic air contained in the tube, the time of vibration or tone of the inſtrument will alſo vary with the length and diameter of the ſaid column of air, and force of the voice, which compreſſes it; as will be eaſy to obſerve from experiments.

If one body be made to ſound with another, their vibrations will coincide after a certain interval; and the ſhorter the interval of the coincidence, the more agreeable is the effect or conſonance to the ear; conſequently thoſe which are moſt frequent produce the moſt perfect conſonance or concord, as it is commonly called. When the times of vibration, therefore, are equal, the concord is more perfect, and more agreeable than any other; and this is called uniſon.

If the times of vibration are as 1 to 2, the coincidence will be at every ſecond vibration of the quickeſt; and ſo this is the next perfect concord, and is what we commonly call a diapaſon, or octave.

If the times of the vibration be as 2 to 3, the coincidence will be at every third vibration of the quickeſt, which therefore is in the next degree of perfection; and this is called a diapente, or fifth. If the times of vibration are as 3 to 4, the coincidence will be at every fourth of the leſſer; and this is called the diateſſaron, or fourth. But this and the next which follow in order, are not ſo agreeable and pleaſant to the judicious ear, and are therefore called imperfect concords.

CHORDEE, in medicine, a ſymptom attending a gonorrhœa, conſiſting in a violent pain under the frænum, and along the duct of the urethra during the erection of the penis, which is incurvated downwards. Theſe erections are frequent and involuntary. The chordee being a ſqueezing of the corroded urethra between the cavernous bodies, and the erection being excited by the ſtimulating matter of a gonorrhœa, the cure is to be performed by preſerving the urethra from being corroded, or by ſuppreſſing the erection, by which means the preſſure of the urethra will be prevented. The firſt may be effected by mild diuretics, ſoftening emulſions, and cooling injections; but the laſt can only be performed by thoſe means that give the moſt ſudden check to the ſwelling of the penis, ſuch as immerſion in cold water. It has been found by experience, that rubbing a mercurial ointment into the part affected, and along the duct of the urethra has done conſiderable ſervice in this complaint.

CHOREA SANCTI VITI, St. VITUS's DANCE, in medicine. See VITUS's *Dance.*

CHORION, in anatomy, the exterior membrane which inveſts the fœtus in the uterus; it is thick, ſpongy villoſe, and furniſhed with a vaſt apparatus of blood-veſſels. It is contiguous to the uterus, and is ſeperable into two membranes or parts.

CHOROGRAPHY, the art of making a map of ſome country or province.

Chorography differs from geography, as the deſcription of a particular country does from that of the whole earth; and from topography, as the deſcription of a country differs from that of a town or diſtrict. See GEOGRAPHY and TOPOGRAPHY.

CHOROIDES, in anatomy, an epithet of ſeveral membranes, which, on account of the multitude of their blood veſſels, reſemble the chorion. See CHORION.

CHORUS, in dramatic poetry, one or more perſons preſent on the ſtage during the repreſentation, and ſuppoſed to be byſtanders, without any ſhare in the action.

Tragedy in its origin was no more than a ſingle chorus, who trod the ſtage alone, and without any actors, ſinging dithyrambics or hymns in honour of Bacchus.

Theſpis, to relieve the chorus, added an actor, who rehearſed the adventures of ſome of their heroes; and Æſchylus, finding a ſingle perſon too dry an entertainment, added a ſecond, at the ſame time reducing the ſinging of the chorus, to make more room for the recitation. But when once tragedy began to be formed, the recitative, which at firſt was intended only as an acceſſory part to give the chorus a breathing-time, became a principal part of the tragedy. At length, however, the chorus became inſerted and incorporated into the action; ſometimes it was to ſpeak, and then their chief, whom they called coryphæus, ſpoke in behalf of the reſt, the ſinging was performed by the whole company; ſo that when the coryphæus ſtruck into a ſong, the chorus immediately joined him.

The chorus ſometimes alſo joined the actors in the courſe of the repreſentation, with their plaints and lamentations, on account of any unhappy accidents that befel them: but the proper function, and that for which it ſeemed chiefly retained, was to ſhew the intervals of the acts; while the actors where behind the ſcenes, the chorus engaged the ſpectators; their ſongs uſually turned on what was exhibited, and were not to contain any thing but what was ſuited to the ſubject, and had a natural connection with it; ſo that the chorus concurred with the actors for advancing the action. In the modern tragedies the chorus is laid aſide and the muſic ſupplies its place.

CHORUS, in muſic, is when the whole company are to join the ſingers in repeating certain couplets of verſes. The word chorus is often placed in Italian muſic, inſtead of *tutti*, or *da capella*, which mean the grand chorus. When after chorus we meet with 1º, or *primo*, we muſt underſtand that it is to be played in the firſt chorus; 2º, IIº, or *ſecondo*, in the ſecond; and, conſequently, that the compoſition is for eight voices or different parts.

CHOUGH, or CORNISH CHOUGH, in ornithology, a ſpecies of corvus, otherwiſe called coracias. See CORVUS and CORACIAS.

CHRISM, oil conſecrated by the biſhop, and uſed in the Romiſh and Greek churches in the adminiſtration of baptiſm, confirmation, ordination, and extreme unction.

CHRIST, an appellation uſually given to our Saviour, anſwering exactly to the Hebrew Meſſiah, and ſignifying one that is annointed. See MESSIAH.

CHRIST-THORN, in botany, a name given to the paliurus, a ſpecies of rhamnus. See RHAMNUS.

CHRISTENING. See BAPTISM.

CHRISTIAN, in a general ſenſe, ſomething belonging to Chriſt.

CHRISTIAN RELIGION, that inſtituted by Jeſus Chriſt.

If we examine the nature and tendency of the religion itſelf which was taught by Chriſt, and by the apoſtles in his name, we ſhall find it to be worthy of God. It retaineth all the excellencies of the Old Teſtament revelation; for our Saviour came not to deſtroy the law and the prophets, but to fulfil them, and carry the ſcheme of religion there laid down to a ſtill higher degree of excellency. The idea given us of God, of his incomparable perfections, and of his governing providence, as extending to all creatures, particularly towards mankind, is the nobleſt that can be conceived, and the moſt proper to produce worthy affections and diſpoſitions towards him. Great care is eſpecially taken to inſtruct us to form juſt notions of God's illuſtrious moral excellencies, of his wiſdom, his faithfulneſs and truth, his impartial juſtice, and righteouſneſs; and ſpotleſs purity: but, above all, of his goodneſs and love to mankind, of which the goſpel contains and exhibits the moſt glorious and attractive diſcoveries and diſplays that were ever made to the world. The exceeding riches of the divine grace and mercy are repreſented in the moſt engaging manner. Pardon and ſalvation are freely offered upon the moſt gracious terms; the very chief of ſinners are invited, and the ſtrongeſt poſſible aſſurances given of God's readineſs to receive them upon their ſincere repentance and reformation; and at the ſame time, to prevent an abuſe of this, the moſt ſtriking repreſentations are made of God's juſt wrath and diſpleaſure, againſt thoſe that obſtinately go on in preſumptuous ſin and diſobedience. It is eſpecially the glory of the goſpel, that the great realities of an unſeen eternal world are there ſet in the moſt clear and open light; there are clearer diſcoveries made, and far ſtronger aſſurances given, of that future life and immortality, than were ever given to mankind before.

As to the precepts of Chriſtianity, they are unqueſtionably holy and excellent. The pureſt morality is taught in all its juſt and noble extent, as taking in the whole of our duty towards God, our neighbours, and ourſelves.

As to piety towards God, the idea there given of it is venerable, amiable, and engaging; we are required to fear God, but it is not with a ſervile horror, ſuch as ſuperſtition inſpires, but with a filial reverence. We are directed and encouraged to addreſs ourſelves to him as our heavenly Father through Jeſus Chriſt the ſon of his love, and in his name to offer up our prayers and praiſes, our confeſſions and thankſgivings, with the profoundeſt humility becoming creatures deeply ſenſible of their own unworthineſs, and yet with an ingenuous affiance, hope, and joy. We are to yield the moſt unreſerved ſubmiſſion to God as our ſovereign Lord, our moſt wiſe and gracious governor, and moſt righteous benefactor; to reſign ourſelves to his diſpoſal, and acquieſce in his providential diſpenſations, as being perſuaded that he ordereth all things really for the beſt; to walk continually as in his ſight, and with regard to his approbation; ſetting him before us as our great all-ſeeing witneſs and judge, our chiefeſt good and higheſt end. Above all, we are required to love the Lord our God with all our heart, and mind, and ſtrength, and to ſhew that we love him by keeping his commandments, by aſpiring after a conformity to him in his inimitable perfections, and by endeavouring, as far as we are able, to glorify him in the world.

CHRISTIANS, thoſe who profeſs to believe and practiſe the Chriſtian religion, and are baptized in the name of Jeſus Chriſt.

The name of Chriſtian was firſt given to the diſciples of Chriſt at Antioch, in the year 40.

✻ CHRISTIAN VI, king of Denmark, viſited England July 7, 1605.

✻ CHRISTIAN VII, king of Denmark, married Matilda, ſiſter to George III. of England, in 1767, viſited England in 1768, and divorced his queen in 1772.

CHRISTIANS *of St. John*, a ſect of Chriſtians very numerous in Balſara, and the neighbouring towns: they formerly inhabited along the river Jordan, where St. John baptized, and it was from thence they had their name.

CHRISTIANS *of St. Thomas*, a ſort of Chriſtians in a peninſula of India, on this ſide of the gulph.

CHRISTMAS, a feſtival of the Chriſtian church, obſerved on the 25th of December, in memory of the nativity of Jeſus Chriſt. Whether it was always obſerved on the 25th of December, is a matter of doubt. Dr. Cave is of opinion that it was firſt kept by the Eaſtern church in January, and confounded with the Epiphany, till, receiving better information from the weſtern churches, they changed it to that day. St. Chryſoſtom affirms, that it was not above ten years ſince Chriſtmas began to be celebrated in the church of Antioch upon that day: Clemens Alexandrinus reckons, from the birth of Chriſt to the death of Commodus, exactly one hundred and ninety-four years, one month, and thirteen days; which time, being taken according to the Egyptian account, and reduced to the Julian or Gregorian ſtile, makes the birth of Chriſt fall on the 25th or 26th of December; yet, notwithſtanding this, the ſame father tells us, that there were ſome who more curiouſly ſearching after the year and day of Chriſt's nativity, affixed the latter to the 25th of the month *Pachon*. Now in that year in which Chriſt was born, the month *Pachon* commenced the 20th of April; ſo that according to this computation, Chriſt was born, on the 16th of May. Hence we may ſee how little certainty there is in this matter, ſince ſo ſoon after the event, the learned were divided in opinion concerning it. As to the antiquity of this feſtival, the firſt footſteps we find of it were in the ſecond century, about the time of the emperor Commodus.

CHRISTMAS ROSE, in botany, a name ſometimes given to a ſpecies of black hellebore. See HELLEBORE.

CHRISTOPHORIANA, chriſtopher-herb, in botany, a genus of plants, called by Linnæus actæa.

CHROASTACES, in natural hiſtory, a genus of pellucid gems, comprehending all thoſe of variable colours, as viewed in different lights.

CHROMA, in muſic, a note or character of time, uſually termed a quaver. See QUAVER.

Chroma is alſo a graceful way of ſinging, or playing with quavers and trilloes.

CHROMATIC, in painting, a term uſed to ſignify the colouring, which makes the third part in the art of painting.

CHRONIC, or CHRONICAL, among phyſicians, an appellation given to diſeaſes that continue a long time, in contradiſtinction to thoſe that ſoon terminate, and are called acute.

Chronical diſeaſes may be ſaid to be produced in the body by ſome peccancy in the juices, either contracted by degrees, or elſe left by ſome acute diſtemper ill cured.

CHRONICLE, in literature, a ſpecies of hiſtory, diſpoſed according to the order of time, and agreeing in moſt reſpects with annals. See ANNALS.

The word chronicle is now become obſolete, being ſeldom uſed except in ſpeak- of the old Engliſh hiſtories, as Stow's Chronicle, Holinſhead's Chronicle, Baker's Chronicle, &c.

Books of CHRONICLES, in the canon of Scripture, two ſacred books, ſignifying in the Greek, remains, additions, or ſupplements, as containing many circumſtances omitted in the other hiſtorical books. In effect, the paralipomena, or chronicles, are an abridgement or ſacred hiſtory to the return of the Jews from the Babyloniſh captivity.

CHRONOGRAM, a ſpecies of falſe wit, conſiſting in this, that a certain date or epocha is expreſſed by numeral letters of one or more verſes.

CHRONOLOGY, the art of computing time, in order to determine with accuracy, the events mentioned in hiſtory. Chronology has been juſtly called the ſoul of hiſtory; for without chronology hiſtory is lifeleſs, and unleſs the times of hiſtorical narrations are in ſome meaſure aſcertained, hiſtory will be very little preferable to romance. We ſay in ſome meaſure, becauſe it is ſometime impoſſible to fix the æreas or epochas of tranſactions with certainty; and the farther we go back into antiquity, the greater will this uncertainty be.

Materials are not only wanting on account of the vaſt number of books which have been loſt, but thoſe which remain frequently contradict each other.

In writing ancient hiſtory, we are to mention whoſe chronology we follow, for fear of leading our readers into an error; for, according to ſome authors, there are, from the beginning of the world, to the Chriſtian æra, but 3740 years; according to others, 6934; which makes a difference of 3194 years.

The birth of Chriſt is alſo very much diſputed, authors varying even in this point, ſeven or eight years. But, ſince that time, chronology begins to be much more certain, by the number of monuments we have left; and the differencies we meet with in authors being much leſs conſiderable.

Chronology is not confined to paſt times and fixing ancient epocha's; it extends itſelf to other uſes, particularly in the church. By the help of this, we fix the moveable feaſts; and among others, that of Eaſter; and by the means of the epacts, periods, and cycles, we form the calendar. So that there are properly two kinds of chronology; one purely hiſtorical, founded on facts tranſmitted to us by antiquity; the other mathematical and aſtronomical, which ſettles the different epocha's by calculations and obſervations, and ſerves to regulate the ſeaſons when the feaſts of the church ſhould be celebrated.

CHRONOMETER, in general, denotes any inſtrument, or machine, uſed in meaſuring time; ſuch are dials, clocks, watches, &c. The term chronometer, however, is generally uſed in a more limited ſenſe, for a kind of clock ſo contrived as to meaſure a ſmall portion of time with great exactneſs, even to the ſixteenth part of a ſecond; of ſuch a one there is a deſcription in Deſaguliers's Experimental Philoſophy, invented by the late ingenious Mr. George Graham; which muſt be allowed to be of great uſe for meaſuring ſmall portions of time in aſtronomical obſervations, the time of the fall of bodies, the velocity of running waters, &c. But long ſpaces of time cannot be meaſured by it with ſufficient exactneſs, unleſs its pendulum be made to vibrate in a cycloid.

CHRYSALIS, in natural hiſtory, a ſtate of reſt and ſeeming inſenſibility which butterflies, moths, and ſeveral other kinds of inſects, muſt paſs through before they arrive at their winged or moſt perfect ſtate. See BUTTERFLY.

The firſt ſtate of theſe animals is in the caterpillar or reptile form: then they paſs into the chryſalis-ſtate, wherein they remain fixed to one ſpot, and ſurrounded with a caſe or covering, which is generally of a conical figure; and laſtly, after ſpending the uſual time in this middle ſtate, they throw off the external caſe wherein they lay impriſoned, and appear in their moſt perfect and winged form of butterflies, or flies. Through the whole courſe of this transformation, the animal remains the ſame, only ſurrounded with different coverings: in the caterpillar form, it is a kind of fœtus, or embryo, wrapped up in ſeveral coats, the limbs of which can only be diſcovered by the aſſiſtance of the microſcope: in the chryſalis or nymph-ſtate, it acquires a farther degree of maturity; and then the limbs, wings, &c. become perfectly diſtinct; and at length it diſengages itſelf, and becomes an inhabitant of the air, adorned with a peculiar kind of plumage; in this laſt ſtate the two ſexes copulate, and the female lays her eggs to be afterwards hatched into caterpillars, and to paſs through the like changes with the parent-inſect.

CHRYSOCOMA, or **CHRYSOCOME**, goldylocks, in botany, a genus of plants, the compound flower of which is tubulous, the proper one of a funnel-form, with a quinquifid limb.

CHRYSOGONUM, moth-mullein, in botany, a genus of plants.

CHRYSOLITE, in natural hiſtory, a gem known by the ancients under the name of the topaz; and the true chryſolite of the ancients, which had its name from its fine gold-yellow-colour, is now univerſally called topaz by modern jewellers. See Topaz.

CHRYSOLITE-PASTE, a kind of glaſs made in imitation of natural chryſolite, by mixing two ounces of prepared chryſtal, with ten ounces of red-lead, adding twelve grains of crocus martis made with vinegar; and then baking the whole for twenty-four hours, or longer, in a well-luted crucible.

CHRYSOPHYLLUM, ſtar-apple, in botany, a genus of plants, the flower of which is monopetalous and campanulated, with the limb divided into ten ſegments, alternately roundiſh and patulous, and narrow and erect; the fruit is a ſubovated large berry, with one cell, containing three oſſeous ſeeds.

CHRYSOSPLENIUM, golden-ſaxifrage, in botany.

CHUB, or **CHUBB**, in ichthyology, the Engliſh name of a ſpecies of cyprinus, with eleven rays in the pinna ani. See Cyprinus.

CHURCH, has different ſignifications, according to the different ſubjects to which it is applied. 1. It is underſtood of the collective body of Chriſtians, or all thoſe over the face of the whole earth, who profeſs to believe in Chriſt, and acknowledge him to be the Saviour of mankind.

2. Church is applied to any particular congregation of Chriſtians, who at one time, and in one place, aſſociate together and concur in the participation of all the inſtitutions of Jeſus Chriſt, with their proper paſtors and miniſters. Thus we read of the church of Antioch, the church of Alexandria, the church of Theſſalonica, and the like.

3. Church denotes a particular ſect of Chriſtians diſtinguiſhed by particular doctrines and ceremonies. In this ſenſe we ſpeak of the Romiſh church, the Greek church, the reformed church, the church of England, &c.

4. Church is uſed to ſignify the body of eccleſiaſtics, or the clergy, in contradiſtinction to the laity. See Clergy.

* **CHURCHES**, firſt began to be built in 696, fifty new ones, were built in London, by order of Parliament, 1710.

* **CHURCH-YARDS**, were firſt conſecrated in 317, and permitted in cities, in 740.

* **CHURCHILL (JOHN)** duke of Marlborough, and prince of the holy Roman empire, one of the greateſt generals, and moſt illuſtrious heroes the world has produced, was the ſon of Sir Winſton Churchill, and was born at Aſhe, in Devonſhire, on Midſummer-day, 1650. His father carried him very early to court, where the beauty of his perſon, and the pregnancy of his parts, recommended him, when but twelve years of age, to the notice of the duke of York, who made him his page, and about 1666 he had a pair of colours. His firſt opportunity of ſhewing his courage was at Tangier, which was then in our hands and beſieged by the Moors. In 1672 the duke of Monmouth, commanding a body of Engliſh auxiliaries in the ſervice of France, Mr. Churchill attended him, was made captain of grenadiers in the duke's own regiment, and diſtinguiſhed himſelf in that famous campaign againſt the Dutch; his majeſty therefore made him lieutenant-colonel, and the duke made him gentleman of his bedchamber, and afterwards maſter of the robes. In 1682 he was created baron of Eymouth in Scotland, and colonel of the third troop of guards; and in 1685 king James created him baron Churchill of Sandridge, in the county of Hertford. And being lieutenant-general of the king's forces, he the ſame year defeated the duke of Monmouth's army, and took him priſoner. But on his royal maſter's attempting to over-turn the laws and the eſtabliſhed religion, he went over to the prince of Orange, leaving a letter for the king, expreſſing the reaſons of his conduct. During the reign of king William, he diſtinguiſhed himſelf on many occaſions; was raiſed to ſeveral conſiderable poſts of honour, and was made earl of Marlborough; but in the height of his favour he was ſuddenly diſgraced; ſtript of his employments, and committed to the Tower

for high treaſon, on the evidence of ſome profligate perſons confined in Newgate for their crimes; but their perjuries being fully detected, he was reſtored to favour. King William on the 19th of June 1698, appointed him governor to the duke of Glouceſter, with this extraordinary compliment, "My lord, make him but what "you are, and my nephew will be all "I wiſh to ſee him." He was after this three times appointed one of the lords juſtices, during that king's abſence. King William alſo appointed him general of foot, and commander in chief of a body of troops he ſent into Holland, and created him ambaſſador extraordinary to the States General. About a week after king William's death, the earl of Marlborough was conſtituted knight of the garter, and ſoon after declared captain-general of all her majeſty's forces, and ſent over to the Hague with the ſame character as before; when the ſtates not only concurred in all that he propoſed, but of their own motion, declared him captain-general alſo of their forces, with an appointment of one hundred thouſand florins per annum, and left to him the rank of ſettling the general officers. War being declared againſt France and Spain on the fourth of May 1702, the earl marched into Flanders, and in the firſt campaign made himſelf maſter of the caſtles of Gavenbroeck and Woerts, the towns of Venlo, Ruremond, and Stevenſwaert, together with the city and citadel of Liege, which laſt was taken ſword in hand. But at the end of the campaign, his lordſhip, in his paſſage by water, was taken priſoner by a party of thirty Frenchmen from the enemy's garriſon at Gueldres, when by an admirable preſence of mind, he ſhewed them an old paſs belonging to his brother, which he happened to have in his pocket, and diſcovered ſo little concern, that he was ſuffered to proceed, and arrived at the Hague. On his return to England he received the thanks of both houſes of Parliament, and was created duke of Marlborough. The next year he inveſted and took Bonn, Limburgh, and Gueldres, and the campaign being over, he went to Duſſeldorp, to meet the late emperor, then ſtyled Charles III. king of Spain, who made him a preſent of a very rich ſword from his ſide.

In 1704, he forced the enemy's entrenchments at Schullenberg, and obliged them to fly with precipitation, after the loſs of one third of their troops. On the ſecond of Auguſt he gained the glorious battle of Hochſtet, in which thirteen thouſand men, among which was marſhal Tallard, with twelve hundred officers were made priſoners, and fourteen thouſand men killed or drowned, beſides a vaſt number that were loſt in their precipitate retreat. After this glorious action, by which the empire was ſaved, and the whole electorate of Bavaria conquered, his grace purſued the French till he forced them to repaſs the Rhine: he then took poſſeſſion of Homberg, Treves, &c. had the pleaſure of ſeeing prince Lewis of Baden take Landau; and then making a tour to Berlin, he by a ſhort negociation ſuſpended the diſputes between the king of Pruſſia and the Dutch. On the 14th of December he arrived in England, laden with the trophies of his victories, bringing with him marſhal Tallard, and twenty-ſix other officers of diſtinction, and one hundred and twenty-one ſtandards, and one hundred and ſeventy-nine colours, which by the queen's order, were hung up in Weſtminſter-hall. He received the ſolemn thanks of both houſes of Parliament.

The next ſummer, the French recovered Huy, and laid ſiege to Liege; but his grace by a quick march raiſed the ſiege of the citadel of Liege, recovered Huy, and forced the French lines. Then making a tour to Vienna, Berlin, and Hanover, the new emperor Joſeph made him a preſent of the principality of Mindelheim. In 1706 his grace gained the battle of Ramillies, Louvain, Bruſſels, Mechlin, Ghent, and Bruges, ſubmitted to king Charle, III. of Spain without a ſtroke; Oudenard ſurrenderred upon the firſt ſummons; Antwerp followed this example, and in the ſpace of a fortnight the duke reduced all Brabant. He laid ſiege to Oſtend, and took it; he beſieged and took the ſtrong fortreſs of Menin; Dendermonde, and Aeth. In 1708, he gained the battle of Oudenard, in which four thouſand of the French were killed, and ſeven thouſand taken priſoners, with above one hundred ſtandards and colours; the cities of Liſle and Ghent were alſo taken. The next year his grace took Tournay, and the famous battle of Malplaquet was fought, in which after a bloody engagement, the French were entirely defeated, and this victory was ſucceeded by the ſurrender of Mons. In ſhort, after theſe, and ſeveral other inſtances of the moſt admirable conduct, by which Lewis XIV. was humbled, and all

Europe aſtoniſhed at his grace's amazing progreſs; after having received all public teſtimonies of his merit, and after Blenheim houſe was built as a monument of his glory, his grace upon the change of the miniſtry, was again ſtripped of his employments, and charged with his miſapplying the public money. He vindicated himſelf with temper, and then went abroad; but he returned after the queen's death, and was reſtored to his poſts. He was the moſt accompliſhed courtier of his time, an able ſtateſman, and a conſummate general. He died at Windſor-lodge, on the 16th of June 1722, in the ſeventy-third year of his age, leaving four daughters, upon whom in ſucceſſion his honours were entailed.

* CHURCHILL (CHARLES) a celebrated ſatiriſt, was the ſon of the rev. Mr. Charles Churchill, curate and lecturer of St. John's, Weſtminſter, and was educated in Weſtminſter-ſchool. He was afterwards refuſed admittance into the univerſity of Oxford, for want of a proper ſkill in the learned languages, on which he was again ſent to Weſtminſter-ſchool, where, at ſeventeen years of age, he contracted an intimacy with a lady, to whom he was married, and their mutual regard for each other continued for ſeveral years. At the uſual age of going into orders, Mr. Churchill was ordained by the late biſhop of London, and obtained a ſmall curacy in Wales of thirty pounds a year. Thither he carried his wife; they took a ſmall houſe, and he paſſed through the duties of his ſtation with aſſiduity and chearfulneſs. He was beloved and eſteemed by his pariſhioners; but endeavouring to advance his fortune, by keeping a cyder-cellar, it involved him in difficulties which obliged him to leave Wales and come to London, where his father dying ſoon after, he ſtepped into the church, in which his father had officiated; and in order to improve his income, he taught young ladies to read and write Engliſh at a boarding-ſchool, kept by Mrs. Dennis, where he behaved with that decency and proper decorum which became his profeſſion. The firſt poem Mr. Churchill publiſhed was the Roſciad, which was received with great applauſe; and it being aſcribed to a combination of wits, the ſecond edition appeared with his name. His next performance was his Apology to the Critical Reviewers, which alſo received the public favour. But while his writings thus amuſed the town, it was diſguſted by his actions. He now quitted his wife, reſigned his gown, commenced a complete man of the town, and giddy with applauſe, ſeemed to think his talents a ſufficient atonement for his follies. He now wrote a poem called Night, which was ſoon followed by the Ghoſt; but theſe laſt had not the rapid ſale he expected; but his Prophecy of Famine ſoon made him ample amends. This was followed by his Gotham, Independence, an epiſtle to Hogarth, the Times, &c. but going to Bologne, on a viſit to Mr. Wilkes, he was there attacked by a milliary fever, which carried him off in a few days. After his death, his poems were collected and printed together, in two volumes octavo.

CHURCH-WARDENS, officers choſen yearly, in Eaſter-week, by the miniſter and pariſhioners of every pariſh, to look after the church, church-yard, church-revenues, &c. alſo to obſerve the behaviour of the pariſhioners, in relation to ſuch miſdemeanors as apertain to the cenſure or juriſdiction of the eccleſiaſtical court.

CHURCHING *of Women after Child-Birth*, an office in the Liturgy, containing a thankſgiving to be uſed by women after being delivered from the great pain and peril of child-birth. This practice, like many other Chriſtian uſages, undoubtedly took its riſe from the Jewiſh rite of purification enjoined by the law of Moſes.

CHYLE, in the animal œconomy, a milky fluid, ſecreted from the aliments by means of digeſtion.

The principles of the chyle ſeem to be ſulphureous, mucilaginous, ſaline, and aqueous. It is a kind of natural emulſion, both with regard to the colour, the ingredients, and the manner of preparation. There is this difference between the artificial and natural emulſion, that the latter is far more pure, and is prepared with much greater apparatus, not by the ſudden expreſſion of part of the liquid, but by a gentle and ſucceſſive percolation.

CHYLIFICATION, the formation of the chyle, or the act whereby the food is changed into chyle. See FOOD and CHYLE.

Chylification commences by comminuting the aliment in the mouth, mixing it with ſaliva, and chewing it with the teeth; by theſe means the food is reduced into a kind of pulp, which being received into the ſtomach, mixes with the juices thereof; and thus diluted begins to ferment or putrify; and aſſuming a very different form from what it had before, grows either acid or rankid. Here it meets with a juice ſeparated from the blood by the glands of that part, whoſe excretory ducts open into the cavity of the ſtomach; by the commixture of theſe liquors, whether of ſaliva or the juice of the ſtomach, a proper menſtruum is compoſed, by which the parts of the aliment are ſtill more and more divided by its inſinuating into their pores, and acquire ſtill a greater likeneſs to the animal fluids, and form what is called chyle. The ſtomach, by means of its muſcular fibres, contracting itſelf, gradually diſcharges its contents by the pylorus into the duodenum; in which gut, after a ſmall ſemicircular deſcent, it meets with the pancreatic juice and bile; both which joining with it, renders ſome part of the aliment more fluid, by ſtill diſuniting the groſſer parts from the more pure, and here the chylification is made perfect.

CHYMISTRY, or CHEMISTRY. See CHEMISTRY.

CICATRICULA, among natural hiſtorians, a ſmall whitiſh ſpeck in the yolk of an egg, ſuppoſed to be the firſt rudiments of the future chick.

CICATRIX, in ſurgery, a little ſeam or elevation of callous fleſh riſing on the ſkin, and remaining there after the healing of a wound or ulcer. It is commonly called a ſcar. In young infants theſe ſcars diminiſh much, and ſometimes vaniſh when they come to age, as may be ſeen in the pits of the ſmall-pox; and in growing they are ſometimes obſerved to change their ſituation.

CICATRIZANTS, in pharmacy, medicines which aſſiſt nature to form a cicatrix. Such are Armenian bole, powder of tutty, deſiccativum rubrum, &c.

Cicatrizants are otherwiſe called eſcharotics, epulotics, incarnatives, agglutinants, &c.

CICELY, the Engliſh name of a genus of plants. See MYRRHIS.

CICER, the chick-pea, in botany, a genus of plants, the flower of which is papilionaceous: the fruit is a turgid pod, of a rhomboid ſhape, containing two roundiſh ſeeds. The ſeeds of this plant are accounted in ſome meaſure abſterſive, and for that reaſon are met with in diuretic compoſitions in the officinal medicines: but they are very ſeldom found in other preſcriptions.

CICHORIUM, ſuccory, in botany, a genus of plants, which is regarded in all the ſhop-compoſitions, where it is concerned, as an hepatic. We ſeldom meet with it in extemporaneous preſcriptions, unleſs in a few medicated ales.

CICINDELA, in zoology, the ſame with the pyrolampis, or glow-worm, a genus of inſects; of which authors enumerate the following ſpecies. 1. The field or green glow-worm, with ten white ſpots on the exterior wings. 2. The black glow-worm, with ſix white ſpots on the exterior wings, common in woody places. 3. The braſſy glow-worm, with broad excavated ſpots in the wings, common about the banks of rivers. 4. The black glow-worm, with a reddiſh thorax; and ſeveral other ſpecies diſtinguiſhed by the like peculiarities.

CICUTA, hemlock, in botany, a tall umbelliferous biennial plant, common about the ſides of fields, under hedges, and in moiſt ſhady grounds. This herb is recommended externally, in cataplaſms, fomentations, and plaſters, as a powerful reſolvent and diſcutient. Taken internally, in no great quantity, it has occaſioned diſorders of the ſenſes; ſleep, convulſions, and in ſome inſtances death; and hence it is ranked among the poiſonous plants: Boerhaave tells us, that by the effluvia of the herb, bruiſed and ſtrongly ſmelt to, he became vertiginous. It is ſaid, that to certain brute animals it is innocent; and that its ill qualities are corrected by vinegar or other vegetable acids. Of its effects in ſmall doſes inſufficient to do harm, in which it has been by ſome recommended, nothing material was known, till the happy experiment of Dr. Storck, lately publiſhed, gave room to hope not only that the virtues aſcribed to it in external applications, are better founded than practitioners in general ſeem now to ſuppoſe, but likewiſe that it is a plant of very great importance as an internal medicine. Dr. Storck relates, that bags of the dry leaves, quilted together, boiled for a few minutes in water, or in milk, where they could not otherwiſe be borne, on account of their ſmell and the itching they produced, then ſqueezed from the ſuperfluous liquid, and applied warm, checked the progreſs of very bad gangrenes, and procured a ſeparation of the corrupted parts: that the ſame application, in a perſon of ſixty who had been gouty for many years, immediately abated the pains, ſoftened and diſcuſſed the tophaceous concretions, and occaſioned the next fit to be milder and of ſhorter continuance: that its effects were likewiſe conſiderable in œdematous tumours, ſchirrhous ſtrumæ, indurations of the glands of the breaſt, and in very bad cancers: that nevertheleſs ſome received from it no benefit, though no harm: that in inflammations or hot ſerous tumours, it was leſs proper than in the above caſes, or had place only after evacuations; and that plaſters, containing the juice of the hemlock, often reſolve and diſcuſs what reſiſts all other applications. It is in form of plaſter that this herb, among us, has been chiefly made uſe of: the recent juice is mixed with a ſolution of twice its quantity of gum ammoniacum made in vinegar of ſquills, and the mixture boiled down to a due conſiſtence. For internal purpoſes, he directs the juice, while freſh, to be inſpiſſated in an earthen veſſel over a very gentle fire, and kept continually ſtirring to prevent its burning, till it acquires the conſiſtence of a thick extract; which is to be mixed with ſo much of the powdered leaves, as will reduce it into a maſs fit for being formed into pills. This preparation, Dr. Storck ſays, was given to a little dog, in the quantity of a ſcruple; taken by himſelf, in doſes of one and two grains, every morning and evening, for ſeveral days; continued by perſons in health, for a year or two; increaſed, in ſome caſes, to a dram and a half in a day, without producing any ill conſequence, or affecting any of the actions, ſecretions, or excretions, of the body. It nevertheleſs had very powerful and ſalutary effects in ſome reputed incurable diſeaſes; acting, though ſlowly and inſenſibly, as a high reſolvent: he relates hiſtories of inveterate ſchirrhuſes, cancers, and the worſt kinds of ulcers and fiſtulæ, being completely cured by it; and ſays it reſolves alſo recent cataracts, or at leaſt reſtrains their progreſs. He begins always with ſmall doſes; giving one pill, of two grains, firſt twice a day, then thrice a day, and gradually increaſing the number to ſix or more for a doſe. The good effects of the medicine were ſometimes viſible in a few days; though the cure generally required ſeveral months. The trials of this medicine made among us, have not, as yet, ſo far as we can learn, been accompanied with ſo much ſucceſs. However, in ſome caſes in which it was applied, it was apparently of great benefit; in ſome, in which it did no ſervice; and in ſome, in which it affected the ſpeech and hearing. It were to be wiſhed, that the author had been more explicit in regard to the preparation of the medicine, for there are grounds to preſume, that its qualities will vary, not a little, according to the ſeaſon or term of age at which the plant is gathered; according as the juice is inſpiſſated entire, or ſuffered previouſly to ſettle; and according to the conſiſtence of the extract requiring a greater or leſs proportion of the leaves in ſubſtance to be mixed. The preparers of the extract in England, have generally depurated the juice; though Dr. Storck's direction of inſpiſſating it, while recent, ſeems to imply that it is to be taken before it has ſuffered any ſeparation of its parts.

The root of hemlock is generally ſuppoſed to be, both in external applications, and when taken internally, of more activity than the leaves. Storck relates, that on being cut, it yields a bitter acrid milk, of which a drop or two, applied to the tip of the tongue, occaſioned a rigidity, pain, and ſwelling of the part, ſo as to prevent ſpeech; and that he was freed from this complaint, by waſhing and rubbing the tongue with citron juice. In drying, it ſeems to loſe of its virulence: he ſays he has taken a grain or two of the powder without injury: there are inſtances of twenty and thirty grains being given with advantage, in ſchirrhuſes of the liver, &c. in quartan agues on the approach of a fit, and even in acute fevers. Nor does the freſh root appear to be at all times of equal virulence; it having been chewed freely, without any other effect being perceived, than an impreſſion of ſweetiſhneſs reſembling that of parſley roots or carrots: there are inſtances of ſome drams, and even ounces, having been taken, without producing any ill conſequence. So variable does this plant appear to be in its qualities; if really the ſubject of the ſeveral hiſtories was preciſely the ſame ſpecies of plant.

The ſeeds have been recommended by ſome as demulcent, paregoric, and antiphrodiſiac. Of their real qualities, little more is known with certainty, than that they are innocent to ſome kinds of birds. Mr. Ray ſays, he found the crop of a thruſh full of hemlock ſeeds, even at the ſeaſon when corn was plentiful.

CICUTA-AQUATICA, long-leaved water hemlock, a poiſonous plant greatly reſembling ſmallage, growing in many meadows and watery places, and which have been too often fatally miſtaken for it. It differs from ſmallage in the leaves being long, ſlender, and deeply cut, commonly into three ſegments: thoſe of ſage are cut in the ſame manner, but the ſegments are ſhort and broad.

CILIA, the eye-laſhes, in anatomy, are certain rigid hairs ſituated on the arch or tarſus of the eye-lids, and bent in a very ſingular manner. They are deſtined for keeping external bodies out of the eye, and for moderating the influx of light.

CILIARE, or LIGAMENTUM CILIARE, or CILIARIS PROCESSUS, in anatomy, a range of black fibres diſpoſed circularly, having their riſe in the inner part of the uvea, and terminating in the prominent part of the cryſtalline humour of the eye, which they ſurround.

CIMOLIA TERRA, in natural hiſtory, a ſpecies of white marle, which is ponderous and friable, and makes a conſiderable efferveſcence with aqua-fortis.

CIMOLIA ALBA, a name given to the hard, heavy, white clay, whereof tobacco-pipes are made.

CINCHONA, in botany, a genus of plants, the flower of which is monopetalous and infundibuliform. This is the tree which produces the quinquina, or Peruvian bark. See QUINQUINA.

CINCTURE, or CEINTURE, in architecture, a ring, liſt, or orlo at the top and bottom of the ſhaft of a column, ſeparating the ſhaft at one end from the baſe, and at the other from the capital. See COLUMN and SHAFT.

The cincture is ſuppoſed to be in imitation of the girts or ferrils, which were uſed by the ancients to ſtrengthen and preſerve the primitive wooden columns.

CINERITIOUS, an appellation given to different ſubſtances, on account of their reſembling aſhes, either in colour or conſiſtence.

CINNABAR, in natural hiſtory, native or factitious. The native cinnabar is an ore of quickſilver moderately compact, very heavy, and of a peccant ſtriated red colour. In this ore the quickſilver is mixed in different proportions with ſulphur. It is ſuch an ore, as to be no other than mercury impregnated with a ſmall quantity of ſulphur, juſt enough to ſhew it in that ſtate, being commonly more than ſix parts of mercury to one of ſulphur: and even the pooreſt cinnabar yields one half mercury: it is of a very bright glittering appearance, when freſh broken; and is uſually found lodged in a bluiſh, indurated clay, though ſometimes in a greeniſh talcy ſtone. For the method of ſeparating mercury from cinnabar, ſee MERCURY.

Factitious CINNABAR, a mixture of mercury and ſulphur ſublimed, and thus reduced into a fine red glebe. The beſt is of a high colour and full of fibres, like needles.

This as well as the native cinnabar, is excellent in epilepſies, and all complaints of the head and nerves. But the factitious is rather to be preferred, as it does not excite nauſeas, vomitings, and other diſorders which ariſe from vitriolic and perhaps arſenical particles blended by nature among ſome of the maſſes of the native mineral.

Cinnabar is likewiſe uſed by painters as a colour, and is rendered more beautiful, by grinding it with gum water and a little ſaffron.

There is likewiſe a blue cinnabar, made by mixing two parts of ſulphur with three of quickſilver and one of ſal ammoniac.

CINNABAR *of Antimony*, a preparation of mercury, ſulphur, and antimony, made by ſublimation, ſaid to be a good diaphoretic and alterative. See ANTIMONY.

CINNAMON, *Cinnamomum*, the bark of a tree of the bay kind, growing in the iſland of Ceylon; freed from the outer green or greyiſh part, and cut into long ſlices, which curl up, in drying, into quills or canes, the form in which it is brought to us; very thin, light, of a reddiſh yellow colour, or pale ruſty iron colour, ſomewhat tough in breaking, and of a fibrous texture like wood. It is frequently mixed with another bark, greatly reſembling it in appearance, but much weaker in virtue, *caſia lignea*: this laſt is diſtinguiſhed by the cloſe ſmooth ſurface which it exhibits on being broken, and by its remarkable ſlimy taſte. This bark is one of the moſt grateful of the aromatics; of a fragrant ſmell, and a moderately pungent, glowing, but not fiery taſte, accompanied with a conſiderable ſweetneſs, and ſome degree of aſtringency. The thinneſt pieces are found to be ſtrongeſt; as containing the largeſt proportion of the active part, and the leaſt of the inert woody matter.

It is ſaid, that from ſixteen ounces of good cinnamon, about two drams of oil may be collected.

There is a cordial water commonly prepared in the ſhops, by drawing off a gallon of proof ſpirit from a pound of cinnamon. A like preparation might be obtained rather more advantageouſly, and free from the foreign flavour which the common proof-ſpirits, are accompanied with, by adding to the ſimple water a ſuitable quantity of pure rectified ſpirit.

White CINNAMON, called alſo winter's bark, is the bark of a tree frequent in the iſlands of St. Domingo, Guadaloupe, &c. of a ſharp biting taſte like pepper. Some uſe it inſtead of nutmeg; and in medicine it is eſteemed a ſtomachic and antiſcorbutic. See WINTERANUS *Cortex*.

CINQUEFOIL, *Quinquefolium*, in botany, the ſame with the potentilla of Linnæus. See POTENTILLA.

Cinquefoil roots are eſteemed drying, aſtringent, and antifebrific; and accordingly have been preſcribed with ſucceſs in agues, and fluxes of all kinds.

CION, or CYON, among gardeners, a young ſprig, or ſprout of a tree.

CIPHER, or CYPHER, one of the Arabic characters, or figures, uſed in computation, formed thus 0.

CIPHER is alſo a kind of enigmatic character, compoſed of ſeveral letters interwoven, which are generally the initial letters of the perſons names for whom the cyphers are intended. Theſe are frequently uſed on ſeals, coaches, and other moveables.

CIPHER denotes likewiſe certain characters diſguiſed and varied, uſed in writing letters that contain ſome ſecret, not to be underſtood but by thoſe between whom the cipher is agreed on. There are ſeveral kinds of ciphers. It is ſaid that king Charles I. had a cypher, conſiſting only of a ſtraight line differently inclined: and there are ways of cyphering by the mere punctuation of a letter, whilſt the words of a letter ſhall be non-ſignificants, or ſenſe that leaves no room for ſuſpicion.

CIPPUS, in antiquity, a low column, with an inſcription, erected on the high-roads, or other places, to ſhew the way to travellers, to ſerve as a boundary, to mark the grave of a deceaſed perſon, &c.

* CIRCE, in fabulous hiſtory, was the daughter of Phœbus, by Perſis, and a famous ſorcereſs. She poiſoned her huſband, the king of the Sarmatæ, for which ſhe was expelled the kingdom, and fled to a promontory in Tuſcany, which afterwards took her name. She there became enamoured with Glaucus, who preferring Scylla to her, ſhe changed her into a ſea-monſter. She transformed Picus, king of the Latins, into a woodpecker: and Ulyſſes being caſt away on her coaſt, ſhe received him kindly, but transformed his companions into ſwine and other beaſts. But Ulyſſes was preſerved by Mercury, who gave him the herb moly to ſecure him from her enchantments. Mythologiſts obſerve, that Circe is a lively image of ſenſual pleaſure, which degrades the man and changes him into a brute.

CIRCENSIAN GAMES, *Circenſes Ludi*, a general term, under which was comprehended all combats exhibited in the Roman circus, in imitation of the olympic games in Greece.

CIRCLE, in geometry, a plane figure, comprehended under one ſingle line, which returns into itſelf, having a point in the middle, from which all the lines drawn to its circumference are equal. Every circle is ſuppoſed to be divided into 360 equal parts called degrees. The circle is the moſt capacious of all figures, containing the greateſt area under the leaſt bounds. The area of a circle is found by multiplying the periphery by the fourth part of the diameter, or half the periphery by half the diameter.

Circles, and their inſcribed ſimilar figures, are always as the ſquares of the diameters, ſo that they are in a duplicate ratio of their diameters, and conſequently of their radii. A circle is equal to a triangle, whoſe baſe is equal to a periphery, and its altitude to the radius. Circles therefore are in a ratio compounded of the peripheries and the radii.

The method of finding the circumference of a circle from its diameter, or radius, being given, is one of the moſt uſeful problems in geometry.

The moſt direct and eaſieſt way is by the help of fluxions, and infinite ſeries.

CIRCLE *of perpetual Occultation*, is a leſſer circle of the ſphere parallel to the equator, being deſcribed by any point of the celeſtial ſphere which touches the ſouthern part of the horizon: all the ſtars that are included within this circle never riſe.

CIRCLES *of Declination on the Globe*, ſo ſome call the meridians on which the declination or diſtance from the equator of any planet or ſtar is accounted.

CIRCLES *of Longitude on the Globe*, are great circles paſſing through the ſtar and the pole of the ecliptic; they determine the ſtar's longitude, reckoned from the beginning of Aries. On theſe circles are counted the latitude of the ſtars.

CIRCLES *of Poſition*, are circles paſſing by the common interſections of the horizon and meridian, and through any degree of the ecliptic or the center of any ſtar or other point in the heavens; and are uſed for the finding out the ſituation or poſition of any ſtar, &c.

Vertical CIRCLES are great circles of the ſphere, interſecting each other in the zenith and nadir; theſe cut the horizon at right angles.

CIRCULAR, in a general ſenſe, any thing that is deſcribed or moved in a round, as the circumference of a circle, or ſurface of a globe.

CIRCULAR LETTER, a letter directed to ſeveral perſons who have the ſame intereſt in ſome common affair.

CIRCULAR LINES, in mathematics, ſuch ſtraight lines as are divided from the diviſions made in the arch of a limb, ſuch as ſines, tangents, ſecants, chords, &c. See SINE and TANGENT.

CIRCULAR NUMBERS, called alſo ſpherical ones, according to ſome, are ſuch whoſe powers terminate in the roots themſelves.

Thus for inſtance, 5 and 6, all whoſe powers end in 5 and 6, as the ſquare of 5 is 25, the ſquare of 6 is 36, &c.

CIRCULAR SAILING is the method of ſailing by the arch of a great circle. See SAILING.

CIRCULAR VELOCITY, in the new aſtronomy, the velocity of any planet, or revolving body, which is meaſured by the arch of a circle.

CIRCULATION, the act of moving round, or in a circle: thus we ſay, the circulation of the blood, the circulation of the ſap, &c.

CIRCULATION *of the Blood*, the natural motion of the blood in a living animal, whereby that fluid is alternately carried from the heart into all parts of the body, by the arteries, from whence it is brought back to the heart by the veins.

This motion is chiefly cauſed by the dilation and contraction of this organ, and is the principle on which life depends; for when it ceaſes in any part, that part dies; when it is diminiſhed, the operations are weak; and when it ceaſes totally, life is extinguiſhed.

All the veins diſcharge themſelves into the ventricles of the heart; from hence all the arteries ariſe: the blood expelled out of the right ventricle muſt be carried, through the pulmonary artery, into the lungs; from which it muſt be returned by the pulmonary veins, to the left ventricle; from the left ventricle the blood thus imported is, by the conſtriction of that part, again expelled into the aorta, and by it diſtributed all over the reſt of the body, and thence is returned again to the right ventricle by the cava, which completes the circulation.

This circulation becomes actually viſible, with the aſſiſtance of a microſcope, eſpecially in fiſh, frogs, &c. wherein the inoſculation, or union of the extremities of the arteries with thoſe of the veins, together with the globules of the blood flowing from the one into the other, may be plainly ſeen.

As to the velocity of the circulating blood, and the time wherein the circulation is compleated, ſeveral computations have been made. By Dr. Keil's account, the blood is driven out of the heart into the aorta with a velocity which would carry it twenty-five feet in a minute: but this velocity is continually abated in the progreſs of the blood, in the numerous ſections or branches of the arteries; ſo that before it arrives at the extremities of the body, its motion is infinitely diminiſhed. The ſpace of time wherein the whole maſs of blood ordinarily circulates, is variouſly determined; ſome ſtate it thus: Suppoſing the heart to make two thouſand pulſes in an hour, and that at every pulſe there is expelled an ounce of blood; as the whole maſs of blood is not ordinarily computed to exceed twenty-four pounds, it muſt be circulated ſeven or eight times over in the ſpace of an hour. The circulation of the blood is generally ſaid to have been firſt diſcovered in England, in the year 1628, by Dr. Hervey, an ingenious and learned phyſician; though there are others who contend for the glory of this moſt important diſcovery. The circulation of the blood was however, altogether unknown to the ancients.

CIRCULATION *of the Sap of Vegetables* is a natural motion of the nutritious juice of plants from the root to the extreme parts, and thence back again to the root. That there is a circulation in the bodies of vegetables ſeems to be evinced by the experiments of modern naturaliſts and gardeners, by means of certain veſſels analogous to the veins and arteries in animals.

CIRCULATION, in chemiſtry, is an operation whereby the ſame vapour, raiſed by fire, falls back, to be returned and diſtilled ſeveral times, and thus reduced into its moſt ſubtile parts.

CIRCULUS, in chemiſtry, an iron inſtrument in form of a ring, which being heated red hot, and applied to the necks of retorts and other glaſs veſſels till they grow hot, a few drops of cold water thrown upon them, or a cold blaſt, will make the necks fly regularly and evenly off.

Another method of doing this, is to tie a thread, firſt dipt in oil of turpentine, round the place where you would have it break; and then ſetting fire to the thread, and afterwards ſprinkling the place with cold water, the glaſs will crack exactly where the thread was tied.

CIRCUMAGENTES MUSCULI, or OBLIQUI MUSCULI, in anatomy, are certain oblique muſcles of the eyes, ſo called from helping to wind and turn the eyes about.

CIRCUMAMBIENT, an appellation given to a thing that ſurrounds another; chiefly uſed in ſpeaking of the air. See AIR.

CIRCUMCISION, the act of cutting off the prepuce; a ceremony in the Jewiſh and Mahometan religions, wherein they cut off the fore-ſkin of their males, who are to profeſs the one or the other law.

CIRCUMCISION, the name of a feaſt, celebrated on the firſt of January, in commemoration of the circumciſion of our Saviour.

CIRCUMFERENCE, in a general ſenſe, the line or lines bounding a plane figure. However, it is generally uſed in a more limited ſenſe, for the curve line which bounds a circle, and otherwiſe called a periphery; the boundary of a right-line figure being expreſſed by the term perimeter.

Any part of the circumference is called an arch, and a right line drawn from one extreme of the arch to the other, is called a chord.

The circumference of every circle is ſuppoſed to be divided into 360 degrees. The angle at the circumference of a circle is double that at the center. See ANGLE.

For the ratio of the circumference of a circle to its radius. See CIRCLE.

CIRCUMFERENTOR, an inſtrument uſed by ſurveyors for taking angles.

CIRCUMFLEX, in grammar, one of the accents. See ACCENT.

CIRCUMGYRATION, the whirling motion of any body round a center; ſuch is that of the planets round the ſun.

CIRCUMLOCUTION, a paraphraſtical method of expreſſing one's thoughts, or ſaying in many words, what might have been expreſſed in few.

CIRCUMLOCUTION, in oratory, the avoiding of ſomething diſagreeable, or inconvenient to be expreſſed in direct terms, by imitating the ſenſe thereof in a kind of paraphraſe, ſo conceived as to ſoften and break the force thereof.

CIRCUM-POLAR STARS, thoſe ſtars, which by reaſon of their vicinity to the pole, move round it without ſetting.

CIRCUMSCRIBED, in geometry, is ſaid of a figure which is drawn round another figure, ſo that all its ſides or planes touch the inſcribed figure.

CIRCUMSCRIBED HYPERBOLA, one of Sir Iſaac Newton's hyperbolas of the ſecond order, that cuts its aſymptotes, and contains the parts cut off within its own ſpace.

CIRCUMSCRIBING in geometry, denotes the deſcribing a polygonous figure about a circle, in ſuch a manner, that all its ſides ſhall be tangents to the circumference.

Sometimes the term is uſed for the deſcribing a circle about a polygon, ſo that each ſide is a chord; but in this caſe it is more uſual to ſay the polygon is inſcribed, than the circle is circumſcribed.

CIRCUMSTANCE, a particularity not eſſential to any action.

Some circumſtances are reckoned purely phyſical, not connecting any moral good or evil with any action; ſuch as killing a man with the right or left hand, &c. Others are accounted properly moral, becauſe they do really influence our actions, and render them more good or evil than they would have been without ſuch circumſtances.

The writers of ethics ſum up all the circumſtances of the actions of men in this one verſe:

Quis, quid, ubi, quibus auxiliis, cur, quomodo, quando.

CIRCUMVALLATION, or *Line of* CIRCUMVALLATION, in the art of war, a trench bordered with a parapet, thrown up quite round the beſiegers camp, by way of ſecurity againſt any army that may attempt to relieve the place, as well as to prevent deſertion.

CIRCUMVOLUTION, in architecture, the torus of the ſpiral line of the Ionic volute.

CIRCUS, in antiquity, a great building of a round or oval figure, erected by the ancients, to exhibit ſhews to the people. The Roman circus was a large, oblong edifice, arched at one end, encompaſſed

paſſed with porticoes, and furniſhed with two rows of ſeats. In the middle was a kind of foot-bank, or eminence, with obeliſks, ſtatutes, and poſts at each end. This ſerved them for the courſes of their bigæ and quadrigæ. Thoſe that have meaſured the circus ſay, that it was 2187 feet long, and 960 broad; ſo that it was the greateſt building in Rome: ſome ſay it would contain 150,000 people, others 260,000 or 300,000.

CIRRI, among botaniſts, fine ſtrings of thread like filaments, by which ſome plants faſten themſelves to walls, trees, &c. ſuch are thoſe of ivy.

CIRRI, in ichthyology, certain oblong and ſoft appendages, not unlike little worms, hanging from the under jaws or mouths of ſome fiſhes.

CIRSOCELE, or HERNIA VARICOSA, in ſurgery, a preternatural diſtenſion or divarication of the ſpermatic veins in the proceſs of the peritonæum immediately above the teſticle, and ſometimes higher up in the ſcrotum, or even in the groin, inſomuch that they reſemble the inteſtines of a bird, and equal the ſize of a gooſe quill, with varicoſe nodes, by which means the teſticle appears much bigger, and hangs down lower than it ſhould do.

CISLEU, in Hebrew chronology, the ninth month of their eccleſiaſtical, and the third of the civil year, anſwering nearly to our November.

CISSOID, in the higher geometry, an algebraic curve, firſt invented by Diocles, an ancient Greek geometrician, whence it is peculiarly called the Ciſſoid of Diocles: its chief uſe is for finding two mean proportionals between two given right lines; but Sir Iſaac Newton, in his *Enumeratio linearum tertii Ordinis*, reckons it amongſt one of the defective hyperbolas, being, according to him, the forty-ſecond ſpecies.

CISTERN, a ſubterraneous reſervoir of rain water; or a veſſel ſerving as a receptacle for rain or other water for the neceſſary uſes of a family.

CISTUS, in botany, a genus of plants. This plant is of an inebriating quality; for which reaſon, in many places in Saxony, they boil it in their beer. They lay it alſo among clothes, to expel moths.

Dwarf-CISTUS, in botany, the ſame with the helianthemum, or ſmall ſunflower.

CITADEL, a place fortified with four, five, or ſix baſtions, built on a convenient ground near a city, that it may command it. The city therefore is not fortified on the part oppoſite to the citadel, though the citadel is againſt the city. The beſt form for a citadel is a pentagon, a ſquare being too weak, and a hexagon too large.

CITATION, in eccleſiaſtical courts, is the ſame with ſummons in civil courts. A perſon is not to be cited out of the dioceſe where he lives, unleſs it be by the archbiſhop in default of the ordinary, or where the ordinary is party to the ſuit, and in caſes of appeal.

CITHARA, in antiquity, a muſical inſtrument, the preciſe ſtructure of which is not known. See Lyre.

CITIZEN, *Civis*, a native or inhabitant of a city, veſted with the freedom and liberties of it.

CITREUM, or CITRUS, the citron-tree, in botany. See Citrus.

CITRINUS, in natural hiſtory, a kind of ſpring cryſtal, of a fine yellow colour, which being ſet in rings, is often miſtaken for a topaz.

CITRON-TREE, *Citrus*, in botany. The fruit of this tree has much the ſame qualities with the lemon, from which it is diſtinguiſhed by its firmneſs, greater bulk, briſker ſmell, and higher colour. We have eſſences, oils, confections, and waters obtained from it. See Citrus.

CITRUL, *Citrullus*, makes a diſtinct genus of plants, according to ſome, otherwiſe called anguria; but Linnæus comprehends it among the cucumbers; it is ſaid to have the ſame medicinal qualities with the cucurbita or gourd.

CITY, *Civitas*, or *Urbs*, a large populous town, capital of ſome country, province, or diſtrict, and the ſee of a biſhop. Town and city are frequently uſed in a ſynonymous ſenſe; however, cuſtom ſeems to have appropriated the term city to ſuch towns as are, or formerly were, the ſees of a biſhop: hence it is that Edinburgh, Glaſgow, &c. are ſtill called cities, though they are no longer the ſees of biſhops, ſince the eſtabliſhment of preſbytery in Scotland.

CIVES, a ſpecies of onions, growing in tufts, and ſeldom exceeding ſix inches in height; they never produce any bulbs, and are much uſed in ſallads in ſpring.

CIVET, a ſoft unctuous odoriferous ſubſtance, about the conſiſtence of honey or butter; of a whitiſh, yellowiſh, or browniſh colour, and ſometimes blackiſh, brought from the Brazils, the coaſt of Guinea, and the Eaſt-Indies; found in certain bags ſituated in the lower part of the belly of an animal of the cat-kind. See Zibethicum.

This ſubſtance has a very fragrant ſmell, ſo ſtrong as, when undiluted, to be diſagreeable; and an unctuous ſubacrid taſte. It is uſed chiefly in perfumes, rarely or never for medicinal purpoſes, though the ſingular effects which muſk has been lately found to produce, may ſerve as an inducement to the trial.

CIVIC CROWN, *Corona Civica*, was a crown given by the ancient Romans to any ſoldier who had ſaved the life of a citizen in any engagement. This was accounted more honourable than any other crown, though compoſed of no better materials than oaken boughs. It was a particular honour conferred upon any that merited this crown, that when they came to any of the public ſhews, the whole company, as well ſenate as people, ſhould ſignify their reſpect, by riſing up, as ſoon as they ſaw them enter, and that they ſhould take their ſeats upon theſe occaſions among the ſenators; being alſo excuſed from all troubleſome duties and ſervices in their own perſons, and procuring the ſame immunities for their father and grandfather.

CIVIL, *Civilis*, in a general ſenſe, ſomething that regards the policy, public good, or peace of the citizens, or ſubjects of the ſtate; in which ſenſe we ſay, civil government, civil law, civil right, civil war, &c.

CIVIL, in a legal ſenſe, is alſo applied to the ordinary procedure in an action, in which ſenſe it is oppoſed to criminal.

CIVIL-LAW is properly the peculiar law of each ſtate, country, or city: but what we uſually mean by the civil law, is a body of laws compoſed out of the beſt Roman and Grecian laws, compiled from the laws of nature and nations, and, for the moſt part, received and obſerved throughout all the Roman dominions for above 1200 years. The civil law is not received at this day in any one nation, without ſome addition or alteration: for ſometimes the feudal law is mixed with it, or general or particular cuſtoms; and often ordinances and ſtatutes cut off a great part of it.

CIVIL WAR, a war between people of the ſame ſtate, or the citizens of the ſame city.

CIVIL YEAR, the legal year, or annual account of time, which every government appoints to be uſed within its own dominions, in contradiſtinction to the natural year, which is meaſured exactly by the revolution of the heavenly bodies.

CIVILIAN, in general, ſomething belonging to the civil law; but more eſpecially the doctors and profeſſors thereof are called civilians: of theſe we have a college or ſociety in London, known by the name of Doctors-commons.

CLAIM, in law, a challenge of intereſt in any thing that is in poſſeſſion of another, as claim by charter, deſcent, acquiſition, &c. Claim is either verbal or by action, and is ſometimes for lands, ſometimes for goods and chattels. It may be made by the party himſelf, and likewiſe by his ſervant or deputy, but not by a mere ſtranger in his name. By the common law, claim is to be within a year and a day after the perſon is diſſeized of land.

CLAIM *of Liberty* is a ſuit to the king in the court of Exchequer, to have liberties confirmed there by the attorney-general.

CLAIR-OBSCURE, CHIARO-SCURO, or CLARO-OBSCURO. See the article Claro-Obscuro.

CLAMP, among brickmakers, a pile of unburnt bricks built up for burning.

CLAMPS, in naval architecture, thick planks in a ſhip's ſide, which ſupport the ends of the beams. See Beams.

CLAMPS, crooked plates of iron, forelocked upon the trunnions of the cannon, to keep them ſteady in their carriages at ſea.

CLAMPS are likewiſe frequently uſed to faſten the maſts or bowſprits of ſmall veſſels and boats.

CLAP, in medicine, the firſt ſtage of the venereal diſeaſe, more uſually called a gonorrhœa. See Gonorrhœa.

CLAP-BOARD, among coopers, any kind of board proper for making caſks or other veſſels of.

* CLARENCE, duke of, brother to Edward IV. was murdered in the Tower in 1473, aged 27 years.

CLARENCIEUX, the ſecond king at arms, ſo called from the duke of Clarence, to whom it firſt belonged; for Lionel, third ſon to Edward III. having by his wife the honour of Clare, in the county of Thomond, was afterwards declared duke of Clarence; which dukedom afterwards eſcheating to Edward IV. he made this earl a king at arms. His office is to marſhal and diſpoſe of the funerals of all the lower nobility, as baronets, knights, eſquires, on the ſouth ſide of the Trent; whence he is ſometimes called Surroy, or South-roy, in contradiſtinction to Norroy.

CLARET, a name given by the French to ſuch of their red wines as are not of a deep or high colour. See WINE.

CLARICHORD, or MANICHORD, a muſical inſtrument in the form of a ſpinnet.

It has forty-nine or fifty ſtops, and ſeventy ſtrings, which bear on five bridges, the firſt whereof is the higheſt, the reſt diminiſhing in proportion, but what diſtinguiſhes it moſt is, that the chords are covered with pieces of cloth, which render the ſound ſweeter, and deaden it ſo, that it cannot be heard at any conſiderable diſtance; whence it comes to be particularly in uſe among the nuns, who learn to play, and are unwilling to diſturb the ſilence of the dormitory.

CLARIFICATION, in chemiſtry. See DEPURATION.

CLARION, a kind of trumpet, whoſe tube is narrower, and its tone acuter and ſhriller than that of the common trumpet.

CLARO-OBSCURO, or CLAIR-OBSCURE, in painting, the art of diſtributing to advantage the lights and ſhadows of a piece, both with regard to the eaſing of the eye, and the effect of the whole piece. Thus, when a painter gives his figure a ſtrong relievo, looſens them from the ground, and ſets them free from each other, by the management of lights and ſhadows, he is ſaid to underſtand the claro obſcuro, which makes one of the great diviſions or branches of painting, the whole of a picture being reſolvable into light and ſhadow.

CLARO OBSCURA, or CHIARO-SCURO, is alſo uſed to ſignify a deſign conſiſting only of two colours, moſt uſually black and white, but ſometimes black and yellow; or it is a deſign waſhed only with one colour, the ſhadows being of a duſky brown colour, and the lights heightened up with white. The word is alſo applied to two prints of two colours taken off at twice, whereof there are volumes in the cabinets of the curious in prints.

CLARY, in botany the Engliſh name of the ſclarea of Tournefort, comprehended by Linnæus among the ſpecies of ſalvia or ſage.

Wild CLARY, the ſame with the horminum of Tournefort, likewiſe accounted by Linnæus a ſpecies of ſage.

CLASPERS. See CIRRI.

CLASS, *claſſis*, an appellation given to the moſt general ſubdiviſions of any thing; thus animal is ſubdivided into the claſſes quadrupeds, birds, fiſhes, &c. which are again ſubdivided into ſerieſes or orders; and theſe laſt into genera.

CLASS, is uſed in ſchools in a ſynonymous ſenſe with form, for a number of boys all learning the ſame thing.

The diſtributing boys into claſſes, contributes not only to raiſe emulation among them, but is of great advantage to the maſter, who by this means, can teach double the number it would otherwiſe be poſſible for him to do.

CLASSIC, or CLASSICAL, an epithet chiefly applied to authors read in the claſſes at ſchools, and who are in great authority there. This term ſeems to owe its origin to Tullius Servius, who in order to make an eſtimate of every perſon's eſtate, divided the Roman people into ſix bands, which he called claſſes. The eſtate of the firſt claſs was not to be under two hundred pounds, and theſe by way of eminence were called *claſſici*, claſſics: hence authors of the firſt rank came to be called claſſics, all the reſt being ſaid to be *infra claſſeum*. By claſſical learning may be underſtood, ſuch an intimacy with the beſt Greek and Latin writers, as not only enables the reader to ſee and admire the beauty of their ſeveral compoſitions, but to imitate their manner of writing, to tranſcribe their ſpirit and eloquence, and make their diction and their ſentiment his own.

CLAVICLES, *claviculæ*, in anatomy, are two bones ſituated tranſverſely and a little obliquely oppoſite to each other, at the ſuperior and anterior part of the thorax, between the ſcapula and ſternum. The uſes of the clavicles are, 1. To keep the arms from falling too forward upon the breaſt, and to facilitate ſeveral of the motions of the arm. 2. To ſerve for the place of origin for ſeveral muſcles. 3. To defend the great ſubclavian veſſels which run under them.

CLAVIS, a key, is ſometimes uſed in Engliſh to denote an explanation of ſome obſcure paſſages in any book or writing.

CLAVUS, in medicine and ſurgery, is uſed in ſeveral ſignifications: 1. Clavus hyſtericus is a ſhooting pain in the head. 2. Clavus oculorum, according to Celſus, is a callous tubercle on the white of the eye, taking its denomination from its figure. 3. Clavus imports indurated tubercles of the uterus. 4. Clavus imports a chirurgical inſtrument of gold mentioned by amatus Luſitanus, deſigned to be introduced into an exulcerated palate, for the better articulation of the voice. 5. Clavis is a callus or corn on the foot: this ariſes from a too great compreſſion of the cutis, which by this means hardens and forms itſelf into a knot. The cure is by ſoftening them, and then pulling them out. The pulp of a lemon laid to a corn, and bound on all night, often ſoftens it ſo by the morning, that it may eaſily be taken off.

CLAW, among zoologiſts, the ſharp-pointed nails with which the feet of certain quadrupeds and birds are furniſhed.

CLAY, *Argilla*, in natural hiſtory, a genus of earths, the characters of which are theſe: they are firmly coherent, weighty, and compact; ſtiff, viſcid, and ductile to a great degree, whilſt moiſt; ſmooth to the touch, not eaſily breaking between the fingers, nor readily diffuſible in water, and when mixed, not readily ſubſiding from it. Of this genus authors enumerate a great many ſpecies, ſome white ſome brown, grey, blue, yellow, green, red, black, &c. Beſides the uſe of clay for making potter's ware, it is a conſiderable improver of light and ſandy grounds, which unleſs they be clayed, will bear nothing but rye, with whatever other compoſts they be manured; but once clayed, they will produce oats, barley, peaſe, &c. In Yorkſhire, they lay an hundred load upon an acre of ground, which will keep the ſoil in heart upwards of forty years: indeed, the firſt year after being clayed, it bears rank, ill-coloured, and broad-grained barley; but afterwards a plump round corn, like wheat.

CLAY-LANDS, thoſe abounding with clay, whether black, blue, yellow, white, &c. of which the black and the yellow are the beſt for corn. All clay-ſoils are apt to chill the plants growing on them in moiſt ſeaſons, as they retain too much water: in dry ſeaſons, on the contrary, they turn hard and choke the plants. Their natural produce is weeds, gooſe-graſs, large daiſies, thiſtles, docks, poppies, &c. Some clay-ſoils will bear clover and rye-graſs; and if well manured, will produce the beſt grain: they hold manure the beſt of all lands, and the moſt proper for them are horſe-dung, pigeon's-dung, ſome kinds of marle, folding of ſheep, malt-duſt, aſhes, chalk, lime, ſoot, &c.

CLEAVERS, *Aparine*, in botany, &c. See APARINE.

CLEF, or CLIFF, in muſic, a mark ſet at the beginning of the lines of a ſong, ſhewing the tone or key in which the piece is to begin; or it is a letter marked on any line which explains the reſt. It is called clef, or key, becauſe hereby we know the names of all the other lines, and conſequently the quantity of every degree or interval: but becauſe every note in the octave is alſo called a key, this letter marked is, for diſtinction ſake, denominated the ſign clef, and by this key is meant the principal note of a ſong, in which the melody cloſes.

CLEFTS, or CRACKS *in the Heels*, a diſeaſe incident to horſes, that comes either by over hard labour, which occaſions ſurfeits, or by giving them unwholeſome meat, or by waſhing them when hot. For the cure, ſhave away the hair, and apply the oil of hempſeed, or linſeed; and be ſure to keep them clean.

CLEMATIS, virgin's bower, in botany, a genus of plants.

* CLEOPATRA, queen of Egypt, was the daughter of Ptolemy Auletes. She obtained the love of Julius Cæſar, by whom ſhe had a ſon, named Cæſareon. After the death of that prince, Mark Anthony marching againſt the Parthians, in the fortieth year before the chriſtian æra, ordered Cleopatra to meet him in Cilicia, to anſwer the accuſations formed againſt her, in relation to her having given ſuccours to Brutus. That princeſs, who was not only a great beauty, but alſo extremely artful, and ſpoke ſeveral languages, reſolved to inſpire Anthony with a paſſion for her. She embarked on the river Cydnus, in a veſſel with a gilt ſtern; the ſails of which were of purple, and the oars ſilver; which kept time with a concert of muſic; while ſhe herſelf lay under a pavilion of cloth of gold, dreſſed in a magnificent habit. The very evening in which ſhe arrived, ſhe gave an elegant repaſt to Anthony, who became ſo diſtractedly in love, that he married her, notwithſtanding his former marriage to Octavia, the ſiſter of Auguſtus. After Anthony's defeat and death, Cleopatra, unable to captivate the affections of Auguſtus, and fearing ſhe ſhould be carried to Rome, to adorn his triumph, cauſed herſelf to be ſtung by an aſp, and died of the wound, in the thirty-ninth year of her age. Auguſtus ordered her a magnificent funeral, and her body, as ſhe deſired, was buried in the ſame tomb with

that of Anthony. She reigned twenty-two years.

She was a woman of great parts, notwithſtanding her vices, and ſpoke many languages with the utmoſt facility; for ſhe could converſe with the Ethiopians, Troglodites, Jews, Arabians, Syrians, Medes, and Perſians, without an interpreter; and always anſwered them in their own languages. In her death ended the reign of the family of Ptolemies in Egypt, after it had ſubſiſted from the death of Alexander, two hundred and ninety-four years; for after this, Egypt was reduced to a Roman province, and ſo remained for ſix hundred and ſeventy years, till it was taken from them by the Saracens.

CLEPSYDRA, an inſtrument or machine ſerving to meaſure time by the fall of a certain quantity of water. There have likewiſe been clepſydræ made with mercury. The Egyptians, by this machine, meaſured the courſe of the ſun. Tycho Brahe, in our days, made uſe of it to meaſure the motion of the ſtars, &c. and Dudley uſed the ſame contrivance in making all his maritime obſervations. The uſe of clepſydræ is very ancient: they were invented in Egypt under the Ptolemies; as were alſo ſun-dials. Their uſe was chiefly in the winter; the ſun-dials ſerved in the ſummer. They had two great defects; the one, that the water ran out with a greater or leſs facility, as the air was more or leſs denſe; the other, that the water ran more readily at the beginning, than towards the concluſion.

M. Amontons has invented a clepſydra free from both theſe inconveniences, and which has theſe three grand advantages; of ſerving the ordinary purpoſe of clocks; of ſerving in navigation for the diſcovery of the longitude; and of meaſuring the motion of the arteries.

CLEPSYDRA is alſo uſed for an hour-glaſs of ſand, and likewiſe for a water-clock. See HOUR-GLASS and WATER-CLOCK.

CLERGY, a general name given to the body of eccleſiaſtics of the Chriſtian church, in contradiſtinction to the laity. The diſtinction of Chriſtians into clergy and laity, was derived from the Jewiſh church, and adopted into the Chriſtian by the apoſtles themſelves: whenever any number of converts were made, as ſoon as they were capable of being formed into a congregation or church, a biſhop or preſbyter, with a deacon, were ordained to miniſter to them.

The clergy of the church of Rome are diſtinguiſhed into regular and ſecular: the regular clergy conſiſts of thoſe monks or religious, who have taken upon them holy orders of the prieſthood, in their reſpective monaſteries. The ſecular clergy are thoſe which are not of any religious order, and have the care and direction of pariſhes. The proteſtant clergy are all ſeculars.

Benefit of CLERGY is an ancient privilege, whereby one in orders claimed to be delivered to his ordinary, to purge himſelf of felony: this purgation was to be by his own oath, affirming his innocency, and the oath of twelve purgators, as to their belief of it, before a jury of twelve clerks: if the clerk failed in his purgation, he was deprived of his character, whereby he became a mere layman; or he was to be kept in priſon till a pardon was obtained; but if he purged himſelf, he was ſet at liberty. This was formerly admitted, even in caſes of murder; but the ancient courſe of the law is much altered upon this head. By the ſtatutes of 18 Eliz. cap. vii. clerks are no more committed to their ordinary to be purged; but every man, to whom the benefit of clergy is granted, though not in orders, is put to read at the bar, after he is found guilty and convicted of ſuch felony, and ſo burnt on the hand, and ſet free for the firſt time, if the ordinary or deputy ſtanding by ſhall ſay, *legit ut clericus*, otherwiſe he ſhall ſuffer death.

CLERK, originally uſed to denote a learned man, or man of letters; whence the term became appropriated to churchmen, who were from thence called clerks or clergymen: the nobility and gentry being uſually bred up to the exerciſe of arms, and none left but the eccleſiaſtics to cultivate the ſciences.

CLERK, ſuch as by their courſe of life exerciſe their pens in any court or office, of which there are various kinds.

CLEW-LINES, ropes faſtened to the clews or lower corners of the ſquare ſails: their uſes are to draw each clew up to the yard, for the more eaſily furling or reefing the ſails.

CLIENT is now uſed for a party in a law-ſuit, who has turned over his cauſe into the hands of a counſellor or ſollicitor.

CLIMACTERIC, *Annus Climactericus*, among phyſicians and natural hiſtorians, a critical year in a perſon's life, in which he is ſuppoſed to ſtand in great danger of death. According to ſome, every ſeventh year is a climacteric; but others allow only ly thoſe years produced by multiplying 7, by the odd number 3, 5, 7, 9, to be climacterical. Theſe years, they ſay, bring with them ſome remarkable change with reſpect to health, life, or fortune; the grand climacteric is the ſixty-third year; but ſome, making two, add to this the eighty-firſt: the other remarkable climacterics, are the ſeventh, twenty-firſt, thirty-fifth, forty-ninth, and fifty-ſixth. The credit of climacteric years can only be ſupported by the doctrine of numbers introduced by Pythagoras; though many eminent men, both among the ancients and moderns, appear to have had great faith in it.

CLIMATE, in geography, a ſpace upon the ſurface of the terreſtrial globe, contained between two parallels, and ſo far diſtant from each other, that the longeſt day in one differs half an hour from the longeſt day in the other parallel.

The moderns reckon the different climates by the increaſe of half an hour in the length of the longeſt day, beginning at the equator; and going on till they come to the polar circle towards the pole: they then count the climates by the increaſe of a whole natural day, in the length of the longeſt day, till they come to a parallel, under which the day is of the length of fifteen natural days, or half a month; from this parallel they proceed to reckon the climates by the increaſe of half or whole months, in the artificial day, till they come to the pole itſelf, under which the length of the day is ſix months. Thoſe between the equator and the polar circles are called hour climates; and thoſe between the polar circles and the poles, month climates.

Vulgarly the term climate is beſtowed on any country or region differing from one another, either in reſpect of the ſeaſons, the quality of the ſoil, or even the manners of the inhabitants, without any regard to the length of the longeſt day.

CLIMAX, or **GRADATION**, in rhetoric, a figure wherein the word or expreſſion which ends the firſt member of a period begins the ſecond, and ſo on; ſo that every member will make a diſtinct ſentence, taking its riſe from the next foregoing, till the argument and period be beautifully finiſhed: as in the following gradation of Dr. Tillotſon. “After we have practiſed good actions a while, they become eaſy; and when they are eaſy, we begin to take pleaſure in them; and when they pleaſe us, we do them frequently; and by frequency of acts, a thing grows into a habit; and confirmed habit is a ſecond kind of nature; and ſo far as any thing is natural, ſo far it is neceſſary, and we can hardly do otherwiſe; nay, we do it many times, when we do not think of it.”

CLINOIDES, in anatomy, four ſmall proceſſes in the inſide of the os ſphenoides, forming a cavity called ſella turcica, in the middle of that bone, in which lies the glandula pituitaria.

CLITORIS, or as ſome call it, *Mentula Muliebris*, in anatomy, a part of the external female pudenda, ſituated at the angle which the nymphæ form with each other. Its common ſtate is to be almoſt entirely buried under the ſkin or prepuce. Its general ſize is that of the uvula, or ſcarce ſo much: its ſhape much reſembles the ſhape of that part, yet it ſometimes is found of an extraordinary bigneſs, as large as the penis: but even in this caſe, it has no urethra. It has a glans or apex as the penis has, but this is not perforated. It is uſually covered with a fœtid matter, like that of the glans of a penis. The prepuce covering the glans of the clitoris, is formed of the cutis of the pudendum, and furniſhed with nervous papillæ: hence it is of exquiſite ſenſibility to the touch. It has alſo a ligament, by which it is connected to the oſſa pubis, in the ſame manner as the penis is in men.

CLOACA, in comparative anatomy, the canal in birds, through which the egg deſcends from the ovary in its exit.

CLOCK, a kind of movement, or machine, ſerving to meaſure and ſtrike time. The uſual chronometers are watches and clocks: the former in ſtrictneſs are ſuch as ſhew the parts of time; the latter ſuch as publiſh it by ſtriking. The invention of clocks with wheels is referred to Pacificus, archdeacon of Verona, who lived in the time of Lotharies, ſon of Louis the Debonnair; on the credit of an epitaph quoted by Ughelli, and borrowed by him from Panvinius. They were at firſt called nocturnal dials, to diſtinguiſh them from ſundials, which ſhewed the hour by the ſun's ſhadow. Others aſcribe the invention to Boethius, about the year 510. But be that as it will, it is certain, the art of making clocks, ſuch as are now in uſe, was either firſt invented, or at leaſt retrieved, in Germany, about 200 years ago.

The invention of pendulum clocks is owing to the happy induſtry of the laſt age: the honour of it is diſputed between Huygens and Galileo.

But be the inventor who he will, it is certain the invention never flouriſhed till it came into Huygens's hands, who inſiſts on it, that if ever Galileo thought of ſuch a thing, he never brought it to any degree of perfection. The firſt pendulum-clock made in England, was in the year 1622, by Mr. Fromantil, a Dutchman.

CLOGS, a kind of wooden pattens without rings. See PATTEN. Clogs is alſo uſed for pieces of wood faſtened about the necks or legs of beaſts, to prevent their running away.

CLOISTER, *Clauſtrum*, an habitation ſurrounded with walls, and inhabited by religious. In a more general ſenſe it is uſed for a monaſtery of religious of either ſex. In the firſt ſenſe, it is the principal part of a regular monaſtery, being a ſquare ſurrounded with walls or buildings. It is commonly placed between the church, the chapter-houſe, and refectory, underneath the dormitory.

CLOSE-HAULED, the ſea-language, a certain ſituation of diſpoſing the ſails of a ſhip to make a progreſs in the neareſt direction poſſible to the point from which the wind bloweth, or to the direction of the wind. A ſhip commonly ſails at this time within about ſix points of it; but ſloops and other ſmall veſſels will frequently go almoſt a point nigher, and all veſſels are ſuppoſed when cloſe hauled to make nearly a point of lee-way, even when they have the advantage of a good ſailing breeze and ſmooth water: lee-way always increaſes in proportion to the riſing of the wind and ſea. Lee-way is known to be an angle included between a ſhip's real and apparent progreſs; as, a ſhip having the wind at north and being cloſe hauled, ſhe will ſtem E N E one day, and W N W the other; but as ſhe will make a point of lee-way, her courſe will be only E by N one way, and W by N the other.

CLOSE-QUARTERS, in naval affairs, certain ſtrong thick fences of wood ſtretching acroſs a merchant-ſhip in ſeveral places; they are uſed as a place of retreat when a ſhip is boarded by her enemy, and are therefore fitted with ſeveral ſmall muſket-holes, from which the ſhip's crew can defend themſelves and annoy the enemy: they are likewiſe fortified with ſeveral ſmall caiſſons called powder-cheſts, which are fixed upon the deck filled with powder, and can be fired at any time from the cloſe-quarters upon the boarders. See BOARDING.

CLOSET, in building, a very ſmall room, generally without any chimney: it is eſteemed one great improvement of our modern architects.

CLOTH, in commerce, a manufacture made of wool wove on the loom. The term is applicable alſo to other manufactures made of hemp, flax, &c. but in a more particular ſenſe it implies the web or tiſſue of woollen threads interwoven, ſome whereof, called the warp, are extended in length from one end of the piece to the other; the reſt, called the woof, diſpoſed acroſs the firſt, or breath-wiſe of the piece. Cloths are of divers qualities, fine or coarſe. The goodneſs of cloth, according to ſome, conſiſts in the following particulars. 1. That the wool be of good quality, and well dreſſed. 2. It muſt be equally ſpun, carefully obſerving that the thread of the warp be finer and better twiſted than that of the woof. 3. The cloth muſt be well wrought and beaten on the loom, ſo as to be every where equally compact. 4. The wool muſt not be finer at one end of the piece than in the reſt. 5. The liſt muſt be ſufficiently ſtrong, of the ſame length with the ſtuff, and muſt conſiſt of good wool, hair, or oſtrich-feathers, or, what is ſtill better, of Daniſh dog's hair. 6. The cloth muſt be free from knots, and other imperfections. 7. It muſt be well ſcoured with fuller's-earth, well fulled with the beſt white ſoap, and afterwards waſhed in clear water. 8. The hair or nap muſt be well drawn out with the teazle, without being too much opened. 9. It muſt be ſhorn cloſe without making it threadbare. 10. It muſt be well dried. 11. It muſt not be tenter-ſtretched to force it to its juſt dimenſions. 12. It muſt be preſſed cold, not hot-preſſed, the latter being very injurious to woollen cloth.

CLOTHS, in painting are pieces of canvas prepared by proper primings for the uſe of painters, and ſold at the colour-ſhops.

Whoever would have good cloths, free entirely from the inconveniences, to which they are liable at the colour ſhops, muſt direct the preparation of them themſelves; and they may produce them in perfection by the following means.

“Let the cloths be firſt well ſoaked with drying oil laid on hot, and when nearly dry, let two or three coats of drying oil and red oker, mixed as thick as can be worked, be ſpread over it: then, the laſt being dry, let the cloth be bruſhed over with hot drying oil, as long as it appears to ſink in: and laſtly, let it be covered with a coat of white lead and oil, rendered grey, or of any other colour deſired, by admixture of the proper pigments. This laſt coat may be poliſhed to a due degree by rubbing with a pumice ſtone, or by glazing it with a glaſs poliſher uſed for linen, and called a callender ſtone."

* **CLOTHO**, or **CLOTHOS**, in fabulous hiſtory, one of the three Parcæ, or Deſtinies, who ſpin the thread of life. She is repreſented holding the ſpindle, dreſſed in a long gown of ſeveral colours, and with a crown on her head, ſet with ſeven ſtars.

CLOUD, a collection of vapours in the atmoſphere. That the clouds are produced in the air, from almoſt water alone, there is ſcarce any one that doubts. But water, every where equally diſpoſed, is tranſparent. Clouds, therefore, are collected from what is beginning to be water; but the parts of which, in the mean time, are circumvolved among one another with an unequal motion, neither reſting nor moving equably. If the water that is floating about in the air, mounts higher and higher, its particles at length arrive in places ſo far above the earth, that they are not any longer much united together, but receding from each other, they do not then conſtitute water, but only the elements of it. But when theſe elements of water come to deſcend again from thoſe upper regions, and are contracted into ſmaller ſpaces, where they aſſociate together, and become a kind of water, they then form clouds. The higher, therefore, the water aſcends in the air, the ſerener and drier the weather will be, and the freer from clouds; and the contrary. But water is carried up to a very conſiderable height in the air; for in Carniola, in the neighbourhood of Venice, there are mountains ten thouſand two hundred and ſeventy-four geometrical feet high, on the tops of which there are indications of moiſture: and on the higheſt tops of theſe mountains nature preſents to our view perpetual ſnows; a certain proof of the elevation of water to ſuch heights. Nay, over the mountain Teneriff, the higheſt in Europe, there conſtantly, about noon, hang fogs, or little white clouds, which are daily reſolved into water, which flows in ſuch plenty down the mountain, that it ſupplies the place of ſhowers, and waters the whole iſland, without rain. We are certain therefore that water aſcends to ſuch a height. However on the tops of the higheſt mountains there are rarely obſerved any clouds, but, on the contrary, to a ſpectator placed there, they appear below him towards the plain.

CLOVE-TREE, in botany. See Caryophyllus.

CLOVE, a term uſed in weights wool. Seven pounds make a clove.

In Eſſex, eight pounds of cheeſe and butter go to the clove.

CLOVE-JULY-FLOWERS. See Caryophyllus.

CLOVER, a ſpecies of the trifolium. See Trifolium.

Clover is greatly cultivated in England for feeding of cattle, and is eſteemed very profitable, becauſe the great quantity of cattle which this graſs will maintain, very much enriches all clayey lands, and prepares them for corn in two or three years, which is the length of time that this crop will continue good. In the choice of this ſeed, that which is of a bright yellowiſh colour, a little inclining to brown, ſhould be preferred: but the black rejected as good for little.

Ten pounds of this ſeed will be ſufficient for an acre of ground; for if the plants do not come up pretty thick, it will not be worth ſtanding. The land in which this is ſown ſhould be well ploughed and harrowed very fine, otherwiſe the ſeeds will be buried too deep, and thereby loſt.

The beſt time to ſow it is about the beginning of Auguſt, at which ſeaſon the autumnal rains will bring up the plants in a ſhort time; whereas, when the ſeeds are ſown in the ſpring, if it be done very early, they are many times burſt with wet and cold; and if it be done late, they are in danger of miſcarrying from drought: whereas in autumn, when the ground has been warmed by the ſummer's heat, the rains then falling greatly promote the vegetation of ſeeds and plants.

The ſeeds ſhould be harrowed in with buſhes; for, if it be done with a common harrow, they will be buried too deep.

Moſt people have recommended the ſowing of this ſeed with ſeveral ſorts of corn: but if it be ſeaſoned, as before directed, it will be much better if ſown alone, for the corn prevents the growth of the plants until it is reaped and taken off the ground, ſo that one whole ſeaſon is loſt; and many times, if there be a great crop of corn upon the ground, it ſpoils the clover, ſo that it is hardly worth ſtanding; whereas, in the way before directed, the plants will have good roots before winter; and in the ſpring will come on much faſter than that which was ſown the ſpring before under corn.

About the middle of May this graſs will be fit to cut, and there ſhould be great care taken in making it; for it will require a great deal more labour and time to dry than common graſs, and will ſhrink into leſs compaſs; but if it be not too rank, it will make extraordinary rich food for cattle. The time for cutting it is when it begins to flower; for if it ſtands much longer, the lower part of the ſtem will begin to dry, whereby it will make a leſs quantity of hay, and that not ſo well flavoured.

Some people cut three crops in one year of this graſs; but the beſt way is to cut it once in the ſprng, and feed it the remaining part of the year, whereby the land will be enriched, and the plants wil grow much ſtronger.

One acre of this graſs will feed as many cattle as four or five acres of common graſs: but great care ſhould be taken of the cattle when they are firſt put into it, leſt it burſt them. To prevent which, ſome turn them in for a few hours only at firſt, and ſo ſtint them as to quantity; and this by degrees, letting them at firſt be only one hour in the middle of the day, when there is no moiſture upon the graſs, and ſo every day ſuffering them to remain a longer time, until they are fully ſeaſoned to it: but great care ſhould be had never to turn them into this food in wet weather; or, if they have been for ſome time accuſtomed to this food, it will be proper to turn them out at night in wet weather, and let them have hay, which will prevent the ill conſequences of this food: but there are ſome who give ſtraw to their cattle, when they are feeding upon this graſs, to prevent the ill effects of it; which muſt not be given them in the field, becauſe they will not eat it where there is plenty of better food. There are others who ſow rye graſs amongſt their clover, which they let grow together, in order to prevent the ill conſequences of the cattle feeding wholly on clover: but this is not a commendable way, becauſe the rye graſs will greatly injure the clover in its growth.

Where the ſeeds are deſigned to be ſaved, the firſt crop in the ſpring ſhould be permitted to ſtand until the ſeeds are ripe, which may be known by the ſtalks and heads changing to a brown colour; then it ſhould be cut in a dry time: and when it is well dried, it may be houſed until winter, when the ſeeds ſhould be threſhed out; but if the ſeeds are wanted for immediate ſowing, it may be threſhed out before it is either houſed or ſtocked: but then it muſt be well dried, otherwiſe the ſeeds will not quit their huſks.

It has been a great complaint among the farmers, that they could not threſh out theſe ſeeds without great labour and difficulty; which muſt be chiefly owing to their cutting the ſpring crop when it begins to flower, and to leave the ſecond crop for ſeed, which ripens ſo late in autumn, that there is not heat enough to dry the huſks ſufficiently; whereby they are tough, and the ſeed rendered difficult to get out: which may entirely be remedied by leaving the firſt crop for ſeed, as hath been directed.

When the cattle are fed with this hay, the beſt way is to put it in racks, otherwiſe they will tread a great quantity of it down with their feet. This feed is much better for moſt other cattle than milch cows, ſo that theſe ſhould rarely have any of it, leſt it prove hurtful to them; though when it is dry, it is not near ſo injurious to any ſort of cattle, as when green.

CLYSTER, a liquid remedy to be injected chiefly at the anus into the larger inteſtines. It is uſually adminiſtered by the bladder of a hog, ſheep, or ox, perforated at each end, having at one of the apertures an ivory pipe faſtened with packthread. Clyſters are prepared of different ingredients, according to the different intentions propoſed, whether to ſoften the indurated fæces, correct the acrid, acid, and ſaline recrements, evacuate the contents of the large inteſtines, corroborate the languid fibres of the inteſtines, and augment their impaired periſtaltic motion; to mitigate the ſpaſms of the inteſtinal coats, and relax their conſtricted fibres; to cauſe a revulſion downwards in lethargic diſorders, apoplexies, frenzies, and other diſorders of the head; to promote labour, whether the fœtus be living or dead; and to expel the ſecundines where they are preternaturally detained. Clyſters are ſometimes uſed to nouriſh and ſupport a patient who can ſwallow little or no aliment, by reaſon of ſome impediment in the organs of deglutition; in which caſes they may be made of broth, milk, ale, and decoctions of barley and oats with wine. The Engliſh introduced a new kind of clyſter, made of the ſmoke of tobacco, which has been uſed by ſeveral other nations, and appears to be of conſiderable efficacy when other clyſters prove ineffectual, and particularly in the iliac paſſion, and in the hernia incarcerata, though it may likewiſe be uſed in an obſtinate conſtipation or obſtruction of the bowels, &c. See Heiſter's Surgery, and Graffius's and Sawzonius's Diſſertations upon the ſubject.

* CLYTEMNESTRA, in fabulous hiſtory, daughter of Leda, whom ſhe

brought forth in an egg, which contained both Clytemneſtra and Caſtor. She married Agamemnon; but while he was at the ſiege of Troy, ſhe had an intrigue with Ægiſthus, whom ſhe engaged to murder Agamemnon, at his return. Her ſon Oreſtes, however, revenged the death of his father by killing Ægiſthus, with his mother Clytemneſtra; but was afterwards haunted by the Furies as long as he lived.

* CLYTE, in fabulous hiſtory, daughter of Orcamus, king of Babylon, who, jealous of the happineſs of her ſiſter Leucothe, who had been debauched by Apollo, acquainted her father with the amour; but Apollo ſtill ſlighting her, ſhe pined away, continually looking on the ſun, till ſhe became transformed into a ſunflower.

COACH, a commodious vehicle for travelling, ſo well known as to need no deſcription.

* Coaches were firſt uſed in England in 1515; an act for licenſing hackney coaches in London paſſed in 1693. The number of hackney coaches was increaſed to one thouſand in 1770.

COACH, or COUCH, in naval affairs, a cabbin or large apartment near the ſtern of a large ſhip of war, the floor of which is the ſame with the quarter-deck; it is always the habitation of the captain.

COADJUTOR is properly uſed for a prelate joined to another to aſſiſt him in the diſcharge of his function, and even in virtue thereof to ſucceed him.

COAGULATION, a certain change in the ſtate of any liquor, by means of which, inſtead of retaining its fluidity, it becomes more or leſs conſiſtent, according to the degree of coagulation.

COAGULUM. See RENNET.

COAL, a black, ſulphureous, inflammable matter, dug out of the earth, and ſerving for fuel in many countries.

Char COAL. See CHARCOAL.

COASTING, in navigation, the act of making a progreſs along the ſea-coaſt of any land: the principal articles relating to this part of navigation are, obſerving the motion of the tide, ſounding, and keeping a good look-out.

COAT, or COAT *of Arms*, in heraldry, a habit worn by the ancient knights over their arms both in war and tournaments, and ſtill borne by heralds at arms. It was a kind of ſur-coat, reaching as low as the navel, open at the ſides with ſhort ſleeves, ſometimes furred with ermine and hair, upon which were applied the armories of the knights embroidered in gold and ſilver, and enamelled with beaten tin, coloured black, green, red, and blue; whence the rule never to apply colour on colour, nor metal on metal. The coat of arms were frequently open, and diverſified with bands and fillets of ſeveral colours, alternately placed, as we ſtill ſee cloths ſcarleted, watered, &c. Hence they were called deviſes, as being divided and compoſed of ſeveral pieces ſewed together; whence the words falſe, pale, chevron, bend, croſs, ſaltier, lozenge, &c. which have ſince become honourable pieces or ordinaries of the ſhield. See CROSS, BEND, CHEVRON, &c.

Coat of arms and banners were never allowed to be worn by any but knights and ancient nobles.

COAT, in naval affairs, a piece of tarred canvas nailed round that part of the maſts or bowſprit where they riſe out of the ſhip. It is uſed to prevent the water from running down into the ſhip's hold.

COATING, in chemiſtry, the covering a retort, or other veſſel, with a compoſition called lute, to prevent the action of the fire from melting the glaſs. See LUTE.

COBALT, in natural hiſtory, a ſingular ſpecies of arſenical ore. In its purer ſtates it is conſiderably compact and heavy, and not unfrequently of a ſemi-metallic appearance. Its texture is always fine, ſometimes granulated, or compoſed of minute grains ranged into ſmall ſtriæ; ſometimes ſmooth and even, without any diſtinguiſhable grains. Its colour is ſometimes a pale iron-grey, ſometimes a darker bluiſh or blackiſh grey. From variations in the appearance of the mineral itſelf, or from its different admixtures, ſome of the mineralogiſts have divided it into ſeveral diſtinct ſpecies, the principal of which are the following. 1. Dark grey cobalt. 2. Bright pale grey or aſh-coloured cobalt. 3. Vitreous cobalt. 4. Cryſtalliform cobalt. 5. Specular cobalt. 6. Earthy cobalt. 7. Flowers of cobalt, of a looſe radiated ſtructure and generally not ſo heavy as the foregoing ores.

The cobalt mines of Schneeberg are ſaid to be two or three hundred fathoms deep; and the cobalt lodged at great depths to be of a better quality than that which is near the ſurface. The Schneeberg-hill, according to the ancient chronicles of Saxony, yielded at firſt only an iron ore; which on ſinking deeper, about the beginning of the fourteenth century, was ſucceeded by a very rich ore of ſilver; this alſo, being at length exhauſted, gave place to cobalt, ſome pieces of which are ſtill found to participate of ſilver, and even of gold.

COBWEB, in phyſiology, the fine net-work which ſpiders ſpin out of their own bowels to catch their prey.

COCCOGNIDIUM, or GRANUM CNIDIUM, is the berry of a ſhrub, growing wild in Germany in moiſt ſhady woods, called by an Arabic name *Mezereon*, and from its leaves bearing ſome reſemblance to thoſe of the bay and of the olive-trees, *Laureola* and *Chamelœa*. The berries are firſt green, afterwards red, and when ripe of a brown colour. They are uſed by the dyers in Germany; but unknown among the artiſts of our country.

COCCULUS INDICUS, in natural hiſtory, the berry of an oriental plant, ſuppoſed to be a ſpecies of *Solanum*, and called, by Ray, *Solanum racemoſum Indicum, &c.* or Indian tree nightſhade, producing the fruit in cluſters like grapes. The berries are brought to us from Alexandria and other parts of the Levant. They are partly about the ſize of bay-berries, and partly of that of chich-peas; roundiſh, but hollowed in a little towards the ſtalk, and approaching to a kidney ſhape, rough on the outſide, and of a grey-browniſh or blackiſh colour; the freſher they are, the heavier, the older, the drier and lighter. The berry is principally employed in ointments for deſtroying cutaneous inſects, and in fiſhing. For this laſt purpoſe, a mixture of the powdered cocculus, with rye-meal, old cheeſe, ſpirit of wine, and other ſubſtances, is formed into ſmall pellets or pills, which are uſed as a bait, or only thrown by themſelves into waters ſtocked with fiſh: the fiſhes by ſwallowing the pills, are ſtupified and benumbed, ariſe to the ſurface, and may be eaſily caught by the hands.

COCCYX, or COCCYGIS OS, in anatomy, a bone ſituated at the extremity of the os ſacrum. See Osteology.

COCHINEAL, in natural hiſtory, a ſmall, irregular, roundiſh inſect, internally of a red colour. It is brought chiefly from New Spain, and there collected from a plant, which is now common in the botanic gardens of Europe, called *opuntia*, or prickly pear-tree. It was formerly ſuppoſed to be the entire fruit or berry of the tree, wrinkled and ſhrivelled by drying; when the pear itſelf became known, cochineal was ſuppoſed to be its ſeeds; but it differs greatly from theſe alſo, as well as from the entire pear. It is now known with certainty to be an animal ſubſtance, and a particular ſpecies of inſect produced upon the tree.

This inſect, like many others, goes through a variety of forms; though the rich red colour, for which it is valued, it poſſeſſes only in the maggot ſtate. On examining carefully ſeveral hundred weight of cochineal as brought to us, we have ſeen ſome grains in all the different ſtates.

The Scarabæus depoſits on the leaves of the opuntia, ſmall eggs, from each of which comes forth a little inſect, reſembling a flea or tick; when this increaſes, it looks like a worm or caterpillar, with ſix ſmall feet, ſcarcely to be ſeen, on the fore part of its body. It crawls among the leaves, and chooſes ſuch ſituations where it may be beſt ſecured from rain and other inclemencies of weather. After theſe have attained to their full growth, they contract themſelves, and at the ſame time become redder and redder. A pellicle is formed all over them, and they adhere motionleſs, as if fixed with glue upon the leaves, which now look as if covered with fine red berries. This ſtate continues about ten or twelve days, when the huſk opens, and diſcovers a winged ſcarabæus again, which has very little of the deep red colour of the maggot or chryſalis. The ſcarabæus lays its eggs, and then ſucceed the ſame transformations as before.

Great care is taken in the preſervation and curation of theſe valuable inſects, in defending them from rain, cold, and heat, from being preyed on by birds, &c. in houſing them at certain ſeaſons, and in collecting and drying them for uſe. But,

Freſh cochineal loſes in drying about two-thirds of its weight.

COCHLEA, the ſnail-ſhell, in zoology, a genus of univalve ſhell fiſh, of a ſpiral figure.

COCHLEA, in anatomy, the third part of the labyrinth of the ear. See Ear.

COCHLEA, the ſcrew, in mathematics. See Screw.

COCHLEARIA, ſcurvy graſs, in botany, a low plant, with thick juicy leaves, which annually grows wild in ſeveral parts of England, particularly about the ſea-coaſts and ſalt-maſhes, and flowers in May, or ſooner.

COCHLEARIA *Hortenſis*, garden, or Dutch ſcurvy-graſs, with the radical leaves unevenly roundiſh, and thoſe on the ſtalks oblong. It is commonly cultivated for the uſe of the ſhops in gardens; and does not appear like many other martime plants, to change its qualities with the ſoil.

COCHLEARIA *Marina, ſeu Britannica*, Engliſh, or ſea-ſcurvy-graſs, with all the leaves alike; oblong, pointed, deeply and irregularly indented or ſituated.

COCK, *Gallus*, in zoology, the Engliſh name of the males of gallinaceous birds, but more eſpecially uſed for the common game or dunghill-cock.

COCK's COMB, in botany, a ſpecies of pedicularis, as well as a ſpecies of amaranth. See PEDICULARIS and AMARANTH.

COCKATOON. See MACAO.

COCKET, a ſeal belonging to the king's cuſtom-houſe, or rather a ſcroll of parchment ſealed and delivered by the officers of the cuſtoms to merchants, as a warrant that their merchandiſes are cuſtomed.

COCKLE, in the hiſtory of ſhell-fiſh, the Engliſh name of the pectunculus. See PECTUNCULUS.

COCOON, in natural hiſtory, the pod, or neſt of the ſilk-worm.

COCOS, or COCO, a nut, the ſhell of which is much uſed by turners, carvers, &c. for divers works.

While the nuts are new, and the bark tender, they yield each about half a pint of clear cooling water, which in a little time becomes firſt a white ſoft pulp, and at length condenſes, and aſſumes the taſte of the nut. The tree yields fruit three times a year, and thoſe ſometimes as big as a man's head: but the cocos of the Antilles are not ſo large as thoſe of the Eaſt-Indies. In the kingdom of Siam, the cocos-fruit dried and emptied of its pulp, ſerves as a meaſure both for things liquid and dry.

COD-FISH, in ichthyology, the largeſt of the genus of the aſelli, called *aſellus maximus* by authors, and ſometimes *aſellus varius, ſive ſtriatus*.

CODE, *Codex*, a collection of the laws and conſtitutions of the Roman emperors, made by order of Juſtinian.

CODICIL, a writing, by way of ſupplement to a will, when any thing is omitted which the teſtator would have added; it is of the ſame nature with a will or teſtament, except that it is made without an executor; and one may leave behind him but one will, though as many codicils as he pleaſes.

COECUM, in anatomy, the firſt of the three large inteſtines, called, from their ſize, inteſtina craſſa. The coecum is ſituated at the right os ilium, and reſembles a bag, and has a vermiform apendage fixed to it.

COEFFICIENTS, in algebra, ſuch numbers, or known quantites, as are put before letters or quantities, whether known or unknown, and into which they are ſuppoſed to be multiplied. Thus, in $3x$, ax, or bx; 3, a, and b, are the coefficients of x; and in $6a$, $9b$; 6, and 9, are the coefficients of a and b.

COELESTIAL, any thing belonging to the heavens: thus we ſay, cœleſtial obſervation, the cœleſtial globe, &c.

Cœleſtial obſervations, are thoſe made by aſtronomers upon the phænomena of the heavenly bodies, with a ſuitable apparatus of aſtronomical inſtruments, to determine their places, motions, &c. The inſtruments chiefly made uſe of, in aſtronomical obſervations, are the aſtronomical gnomon, quadrant, micrometer, and teleſcope. See GNOMON, QUADRANT, &c.

COELESTIAL *Globe*. See GLOBE.

COELIAC ARTERY, in anatomy, that artery which iſſues from the aota, juſt below the diaphragm.

The trunk of this artery is very ſhort, and near its origin it ſends off from the right ſide two ſmall diaphragmatic branches, ſometimes only one; and is afterwards diſtributed into right and left, communicating with other arteries of the ſame name, which come from the intercoſtal and mammary arteries.

COELIAC PASSION, in medicine, a kind of flux, or diarrhœa, wherein the aliments, either wholly changed, or only in part, paſs off by ſtool. Dr. Friend ſays, that the moſt rational and ſucceſsful method of treating the cœliac paſſion, is to adminiſter ſuch remedies as gently ſtimulate the inteſtinal tube, and deterge obſtructed glands; for this purpoſe, purges adminiſtered in ſmall quantities, and frequently repeated, and gentle vomits of ipecacuanha are recommended.

COELIC DIABETES, called alſo cœliaca urinalis, a diſorder wherein the chyle paſſes off, along with, or inſtead of urine. See DIABETES.

COELIAC NEIN, in anatomy, that running through the inteſtinum rectum along with the cœliac artery.

* COELUS, heaven, in Pagan mythology, the ſon of Æther and Dies, or Air and Day. Heſiod ſays he married Terra, or the Earth, on whom he begat the Mountains, the Ocean, &c. but having at length impriſoned the Cyclops,

who were alſo his children, his wife, being offended, incited her ſon Saturn to revenge the injury done to his brothers; and, by her aſſiſtance, he bound and caſtrated Cœlus, when the blood that flowed from the wound produced the three furies, the giants, and the wood-nymphs.

COENOBITE, in church hiſtory, one ſort of monks in the primitive chriſtian church, who were ſo called from living in common, in which they differed from the Anchorites, who retired from ſociety.

COEQUALITY, among Chriſtian divines, a term to denote the equality of the three perſons in the Trinity.

CO-ETERNITY, among Chriſtian divines, the eternal exiſtence of two or more beings: it is chiefly uſed in ſpeaking of the perſons of the Trinity.

COEUR, in heraldry, a ſhort line of partition in pale, in the center of the eſcutcheon, which extends but a little way, much ſhort of the top and bottom, being met by other lines, which form an irregular partition of the eſcutcheon.

CO-EXISTENCE, the exiſtence of two or more things at the ſame time.

COFFEE, in commerce, the berry of a tree growing naturally in Arabia, and was not known in Europe till 1650. It is now cultivated alſo in Perſia, the Eaſt-Indies, and in America. It is raiſed likewiſe in botanic gardens in different parts of Europe, but not without ſhelter and artificial heat. Prince Eugene's noble garden at Vienna produced coffee more than ſufficient for his own conſumption. The tree is uſually ſmall, though ſometimes it riſes to the height of 20, 30, and even 40 feet: it is an evergreen, and at all ſeaſons of the year is full loaded with flowers and fruit. The flower is highly odiferous, and reſembles that of the jaſmine, of which the coffee-tree is held a ſpecies. The Arabians name the tree *bun* or *bon*, whence perhaps the common expreſſion of coffee beans: the dietetic infuſion prepared from the ſeeds, they call cahoueh, or coave, whence coffee or caffee. The entire fruit ſomewhat reſembles a cherry: containing under a pulpy ſkin, an oval kernel, which ſeparates longitudinally into two parts, each covered with a thin ſhell, and marked with a furrow on the flat ſide, where they were joined. Three ſorts of coffee are diſtinguiſhed in trade; Arabian or Levant, Eaſt-Indian or Java, and Weſt-Indian or Surinam coffee: the firſt is the ſmalleſt, and of a ſomewhat darker yellow colour than the other ſorts; the ſecond is the largeſt and of the paleſt yellow; the third, of a middling ſize, and in colour greeniſh. The peculiar flavour, for which coffee is admired, is communicated by roaſting: common beans, peas, and other farinaceous ſubſtances, receive from that proceſs a ſimilar flavour, and have been ſometimes uſed as ſuccedanea to coffee, and fraudulently mixed, by the venders of that commodity, with ſuch as is ſold in powder. With regard to the medical qualities of coffee, the common infuſions, or rather decoctions of it appear to be in general innocent; to be little diſpoſed to produce the ill effects aſcribed to them by ſome, and to have little claim to the extraordinary virtues for which they are recommended by others.

COFFER, a long ſquare box, of firm timber, about three feet long, and one and a half broad, wherein tin-ore is broken to pieces in a ſtamping mill. See Tin and Mill.

COFFER, in fortification, a hollow lodgment athwart a dry moat, from ſix to ſeven feet deep, and from ſixteen to eighteen broad; the upper part being made of pieces of timber, raiſed two feet above the level of that moat, which little elevation has hurdles, laden with earth for its covering, and ſerves as a parapet with embraſures.

COFFERER *of the King's Houſhold*, a principal officer in the court, next under the comptroller, who, in the compting-houſe, and elſewhere at other times, has a ſpecial charge and overſight of the other officers of the houſe, for their good demeanor and charge in their offices, to all which he pays their wages.

COGGESHALL's *Sliding Rule*. See Sliding Rule.

COGNATION, in the civil law, a term for that line of conſanguinity which is between males and females, both deſcended from the ſame father; as agnation is for the line of parentage between males only deſcended from the ſame ſtock.

COGNIZANCE, or CONNUSANCE, in law, has various ſignifications; ſometimes it is an acknowledgment of a fine, or confeſſion of ſomething done; ſometimes the hearing of a matter judicially, as to take cognizance of a cauſe, and ſometimes a particular juriſdiction, as cognizance of pleas, is an authority to call a cauſe or plea out of another court, which no perſon can do but the king, except he can ſhew a charter for it.

CO-HABITATION, among civilians, the ſtate of a man and a woman who live together like huſband and wife, without being legally married.

CO-HEIR, a perſon who ſucceeds to a ſhare of an inheritance, to be divided among ſeveral.

COHESION, in philoſophy, that action by which the particles of the ſame body adhere together.

The cauſe of this coheſion has extremely perplexed the philoſophers. In all the ſyſtems of phyſics, matter is ſuppoſed, originally, to conſiſt of minute indiviſible atoms; but how, and by what principle theſe ſeveral and diſtinct corpuſcles ſhould come firſt combined into little ſyſtems, and how they ſhould come to perſevere in that ſtate of union, is a point not yet determined: a point of the greateſt difficulty, and even of the greateſt importance of any in phyſics. J. Bernoulli, thinks it owing to the preſſure of the atmoſphere; others, to the figure of the component particles; but the generality, with Sir Iſaac Newton, to attraction. See ATTRACTION.

COHABITION, in chemiſtry, the returning a liquor diſtilled from any ſubſtance back upon the ſame ſubſtance, and diſtilling it again, either with or without an addition of freſh ingredients.

COHORT, *Cohors*, in Roman antiquity, the name of part of the Roman legion, comprehending about ſix hundred men.

COIF, the badge of a ſerjeant at law.

COIN, a ſpecies of money, as gold, ſilver, or copper. Hence coin differs from money, as the ſpecies does from the genus; money being any matter, whether metal, wood, leather, glaſs, horn, fruits, ſhells, &c.

It ſeems derived from the French, *coign*; a corner; whence it has been held, that the moſt ancient ſort of coin was ſquare with corners.

It is one of the royal prerogatives belonging to every ſovereign prince, that he alone, may order the quantities, value and faſhion of his coin: but the coin of one king is not current in the kingdom of another, unleſs at a great loſs; though our king, by his prerogative, may make any foreign coin lawful money of England at his pleaſure, by proclamation. Counterfeiting, clipping, or impairing the king's coin, is high treaſon; as alſo the making any ſtamps, dye, mold, &c. for coining, except by perſons employed in the mint, &c. and the conveying, ſuch out of the mint is the ſame, and ſo is colouring metal, reſembling gold or ſilver coin, marking it on the edges, &c.

COINING, or COINAGE, the ſtamping and making money. Formerly the fabric of coins was different from what it is at preſent. Coining has been conſiderably improved and rendered expeditious by ſeveral ingenious machines, and by a wiſe application of the ſureſt phyſical experiments to the methods of fining, trying, and ſtamping the different metals. The three fineſt inſtruments the mint-man uſes are, the laminating engine, the machine to mill the edges of coins, and the preſs.

After they have taken the laminæ or plates of metal out of the mould into which they are caſt, they do not beat them on the anvil, as was formerly done; but they make them paſs and repaſs between the ſeveral rollers of the laminating engine, which being gradually brought cloſer and cloſer to each other, preſently give the laminæ its uniform and exact thickneſs. Inſtead of dividing the laminæ into ſmall ſquares, they at once cut clean out of it as many planchets as it can contain, by means of a ſharp ſteel trepan, of a round figure, hollow within, and of a proportionable diameter, to ſhape and cut off the piece at one and the ſame time. After theſe planchets have been compared and weighed with ſtandard pieces, filed or ſcraped, to get off the ſuperfluous part of the metal, and then boiled and made clean; they arrive at laſt at the machine, which marks them upon the edge, and finally the preſs, which ſqueezing each of them ſingly between the two dyes brought near each other, with one blow, forces the two ſurfaces or fields of the piece to fill exactly all the vacancies of the two figures engraved hollow. The engine, which ſerves to laminate lead, gives a ſufficient notion of that which ſerves to flatten gold and ſilver laminæ between rollers of a leſſer ſize.

Britiſh COINAGE, both by the beauty of the engraving, and by the invention of the impreſſions on the edges, that admirable expedient for preventing the alteration of the pieces, is carried to the utmoſt perfection. It was only in the reign of king William III. that the hammer-money ceaſed to be current in England, where till then it was ſtruck in that manner, as in other nations. Before the hammer coin was called in, the Engliſh money was in a wretched condition, having been filed and clipped by natives as well as foreigners, inſomuch that it was ſcarce left of half the value: the retrieving this diſtreſſed ſtate of the Engliſh money, is looked upon as one of the glories of king William's reign. Being again in a very bad condition, and both much debaſed, and demoliſhed, the late act of parliament, of XIII G. 3. was made to put a ſtop to it, by permitting all money, that wanted more than a reaſonable allowance for wear, to be immediately cut and cancelled.

The Britiſh coinage is now wholly performed in the Tower of London, where there is a corporation for it, under the title of the mint, and nothing taken as formerly, either for the king, or for the expence of coining.

There is a duty of ten ſhillings per ton on wine, beer, and brandy imported, called the coinage-duty, granted for the expence of the king's coinage.

The invention of the preſs is not yet gone out of Europe; nor even eſtabliſhed in every part of it: nor was the invention known till the year 1553, when the coining preſs was invented by an engraver, one Antoin Brucher, and was firſt tried in the French king's palace at Paris, for the coining of counters.

COINING, in the tin-works, the weighing and ſtamping the blocks of tin with a lion rampant, performed by the king's officer; the duty for every hundred weight being four ſhillings.

COITION, the intercourſe between the male and the female in the act of generation.

COLARIN, in architecture, the little frize of the capital of the Tuſcan and Doric column, placed between the aſtragal and the annulets; called alſo hypotrachelium, and ſometimes cincture.

COLARIN is alſo uſed for the orlo or ring on the top of the ſhaft of the column, next the capital.

COLCHICUM, meadow ſaffron, in botany, a genus of plants.

The roots of which though once eſteemed poiſonous, are now recommended by ſome, in peſtilential and putrid caſes, the ſmall-pox, purple fever, &c. But great caution ought to be uſed in adminiſtering it.

COLCOTHAR, in pharmacy, a preparation of vitriol calcined to a redneſs.

COLD, in general, the privation or abſence of heat; and conſequently, thoſe who ſuppoſe heat to conſiſt in a briſk agitation of the component particles of the hot body, define cold to be ſuch a faint motion of theſe parts, as is either altogether or nearly imperceptible to our organs of feeling: in which ſenſe, cold is a mere term of relation between the cold body and the organs of ſenſation; and in fact, the ſame body will be felt either hot or cold, according as the ſenſible organ is colder or hotter than it.

Be this as it will, cold is found to have very conſiderable effects, and therefore ſhould ſeem to be ſomething poſitive. An intenſe degree of heat reduces moſt bodies, even gold and the hardeſt ſtones, the diamond excepted, to a fluid ſtate. On the other hand, not only are theſe reſtored to their former ſolidity by cold, but greater degrees of it will congeal all kinds of water, even that of the ocean, and the watery particles to be found in ſpirits. See FROST, CONDENSATION, &c.

The ice of oily and ſaline bodies differs greatly from that of water, which is friable and eaſily broke, whereas that of mercury is ductile. And M. Braun conſiders all bodies which liquify by heat, as ſo many ſpecies of ice; ſo that every metal wax, tallow, and glaſs, comes within his view in this reſpect. Mercury then is, in its natural ſtate a ſolid metal, but is fuſible in a very ſmall degree of heat.

COLD, in medicine, is productive of inflammatory diſorders, as coughs, pleuriſies, peripneumonies, rheumatic pains, conſumptions, &c. See COUGH, PLEURISY, PERIPNEUMONY, &c.

To remove a cold in the beginning, ſmall and repeated bleedings are recommended; which likewiſe prove beneficial in coughs, and the confirmed conſumption, even after a purulent ſpitting and hectical ſymptoms have appeared. The quantity to be taken away at a time, may be from four to ſeven or eight ounces, once in eight or ten days; concerning which it is obſervable, that the patients do not find themſelves ſo much relieved on the firſt as on the ſecond or third night after bleeding.

COLDSHIRE-IRON, that which is brittle when cold. See IRON.

COLEOPTERA, among zoologiſts, an order of inſects, comprehending all thoſe with four wings.

COLE-SEED, the ſeed of the *napſus ſativa*, or long-rooted, narrow-leaved, navea, and comprehended by Linnæus among the braſſicas, or cabbage kind. See BRASSICA.

This plant is cultivated to great advantage in many parts of England, on account eſpecially in marſh or fenny lands, thoſe newly recovered from the ſea, or indeed any other land that is rank or fat, whether arable or paſture.

The beſt ſeeds are brought from Holland, and ſhould be ſown about Midſummer, the very day that the land is ploughed; a gallon will ſerve an acre.

It is likewiſe cultivated for winter-food for cattle, and is a very good preparative of land for barley or wheat.

COLE-WORT, in gardening, a ſpecies of braſſica. See Brassica.

COLIC, in medicine, a ſevere pain in the lower venter, ſo called, becauſe the diſorder was formerly ſuppoſed to be ſeated in the colon.

There are different cauſes of theſe ſevere pains of the inteſtines, and according to the nature, diſpoſition, and force of theſe cauſes, are the ſymptoms diverſified, and the danger more or leſs to be apprehended. A very frequent cauſe is a retention and induration of the fœces in the large inteſtines, and ſometimes in the ſmall ones, proceeding, in a great meaſure from a load of acido-viſcid crudities, dry, juiceleſs, and aſtringent food, immoderate ſleep, and a way of life unuſed to exerciſe and motion. In this obſtructed and coſtive ſtate of the belly, whenever it happens that upon the uſe of ſweet aliments, and ſuch as are ſubject to ferment, of fat fleſh meat, eſpecially mutton, with drinking of cool liquors, and refrigeration of the feet and belly, the inflation of the abdomen is increaſed, and the pain exaſperated; hence we may diſcern the nature and marks of the flatulent colic, which the ancients aſcribed to a cold cauſe, and whoſe generation and frequent attacks ſuppoſe an imbecility of the inteſtines, and a want of a due tone and ſtrength in thoſe parts; whence this ſort of colic is very incident to fat and phlegmatic, as well as old and infirm perſons, eſpecially if they take not due care to keep the cold from their feet, back, and belly.

Another kind of colic is the bilious, which according to the ancients, owes its original to a hot cauſe, and ariſes from a bilious, acrid, corrupted humour, collected in too great plenty, and ſtagnating in the ſmall inteſtines, particularly the duodenum. It frequently ſucceeds a great fit of anger, eſpecially in perſons of a hot and dry conſtitution, in a hot ſeaſon; or it proceeds from an exceſſive uſe of hot and ſpirituous liquors, and by cooling portions, which obſtruct perſpiration, is exaſperated, and rages with greater violence. The remarkable ſymptoms which attend it, are a hoarſeneſs of the voice, the heart-burn, a continual loathing of food, a vomiting of porraceous bilious matter, the hiccup, a hot and feveriſh diſtemperature, reſtleſſneſs, &c.

As to the method of cure, it appears, from what has been ſaid, that the cauſes of this affection are ſurpriſingly various; and it may be inferred, that the manner of treatment ought to be varied in a way ſuitable to the difference of the cauſes, whence the pain of the inteſtines proceeds.

When from a ſuppreſſion of the cuſtomary flux of the hæmorrhoids, or menſes, eſpecially in bodies abounding with blood, there ariſes a violent pain of the abdomen, attended with much heat, &c. a vein ſhould be opened in the foot, then emollient clyſters, antiſpaſmodic powders, with a ſmall portion of nitre, cinnabar, and caſtor, ſhould be uſed, and the feet bathed; and under a remiſſion of the fit, care ſhould be taken to reſtore the menſes in women, and the hæmorrhoids in men, to their natural courſes. When the pain of the inteſtines proceeds from a redundance of intemperate and cauſtic bile, the ſame remedies are of ſervice.

But what exceeds theſe and all other remedies in this caſe, is a nitrous powder, mixed with a drop or two of the true diſtilled oil of millefolium, to be taken in three or four ounces of the water of common chamomile-flowers.

If the pain be tenſive, and fixed in the right or left hypochondrium, or beneath the ſtomach, it is a ſure ſign that the diſorder proceeds from flatulencies, or excrements incloſed within the flextures of the colon. In this caſe, the principal indication directs us to the uſe of clyſters of an emollient, diſcutient, and corroborating quality, not omitting external applications of carminative and emollient liniments to the affected part.

When the rectum and part of the colon are affected with a ſtrong convulſive ſtricture, ſo as to be incapable of tranſmitting either flatus or fœces; and a clyſter cannot conveniently be introduced, the abdomen is to be fomented all over with hot and rich oils, by coction, particularly thoſe of chamomile, dill, or rue, boiled with the fats of a badger, dog, fox, beaver, &c. which may be introduced, if poſſible into the belly by clyſters.

A flatulent colic, proceeding from imbecility, and want of a due tone of the ſtomach and inteſtines, admits of the uſe of carminative things ſomewhat hotter than ordinary. Among theſe are ſpirituous carminative waters, prepared of the ſeeds of cumin and caraway, orange-peel, and the flowers of common Roman chamomile, and cardamums diſtilled in wine.

COLLAR, in a modern ſenſe, an ornament conſiſting of a chain of gold, enamelled, frequently ſet with cyphers or other devices, with the badge of the order hanging at the bottom, worn by the knights of ſeveral military orders over their ſhoulders, on the mantle, and its figure drawn round their armories.

COLLAR *of a Plough*, an iron ring fixed on the middle of the beam, wherein are inſerted the tow and bridle chains. See Plough.

COLLAR *of a Draught Horſe*, a part of harneſs made of leather and canvas, and ſtuffed with ſtraw or wool, to be put about the horſe's neck.

COLLATERAL, in genealogy, thoſe relations which proceed from the ſame ſtock, but not in the ſame line of aſcendants or deſcendants, but being, as it were, aſide of each other.

COLLATION, in the canon law, the giving or beſtowing of a benefice on a clergyman by a biſhop, who has it in his own gift or patronage. This differs from preſentation, in that the latter is properly the act of a patron, offering the clerk to the biſhop to be inſtituted into a benefice, whereas the former is the act of the biſhop himſelf. The collator can never confer a benefice on himſelf.

COLLATIVE BENEFICES, thoſe which are in the gift of the ordinaries, and within their own juriſdiction, in which caſe there need no preſentation, but the ordinary collates or inſtitutes the clerk, and ſends him to the archdeacon, or other perſon, whoſe office it is to induct him.

COLLECTIVE, among grammarians, a term applied to a noun expreſſing a multitude, though itſelf be only ſingular; as an army, company, troop, ſwarm, flock, &c. called collective nouns.

COLLEGATARY, in the civil law, a perſon who has a legacy left him in common with one or more perſons.

COLLEGE, *Collegium*, an aſſemblage of ſeveral ſocieties, or of ſeveral perſons into one ſociety.

COLLEGE *of Civilians*, commonly called Doctor's Commons, founded by Dr. Harvey, dean of the arches, for the profeſſors of the civil law reſiding in the city of London. The judges of the arches, admiralty and prerogative court, with ſeveral other eminent civilians, commonly reſiding here.

COLLEGE *of Phyſicians*, a corporation of Phyſicians in Warwick-Lane, London, whoſe number by charter, is not to exceed eighty. The chief of them are called fellows, and the next candidates, who fill up the places of fellows as they become vacant by death, or otherwiſe. Next to theſe are honorary fellows, and laſtly, the licentiates; that is, ſuch as being found capable, upon examination, are allowed to practiſe phyſic.

Sion COLLEGE, was formerly a religious houſe, next to a ſpittal, or hoſpital, and now it is a compoſition of both, viz. a college for the clergy of London, who were incorporated in 1631, at the requeſt of Dr. White, under the name of the preſident and fellows of Sion college, and an hoſpital for ten poor men, the firſt within the gates of the houſe, and the latter without.

Greſham COLLEGE, or COLLEGE of *Philoſophy*, a college founded by Sir Thomas Greſham, who built the Royal Exchange; a moiety of the revenue whereof he gave in truſt to the mayor and commonalty of London, and their ſucceſſors for ever; and the other moiety to the company of mercers; the firſt to find four able perſons to read in the college divinity, aſtronomy, muſic, and geometry; and the laſt, three or more able men to read rhetoric, civil law, and phyſic; a lecture upon each ſubject is to be read in term time, every day, except Sundays, in Latin, in the forenoon, and the ſame in Engliſh in the afternoon; only the muſic lecture is to be read alone in Engliſh. The lecturers have each fifty pounds per ann. and a lodging in the college. But Greſham college having been lately pulled down, and the exciſe-office erected on the ſpot, the reſpective lecturers are allowed a ſum annually, in lieu of their apartments, which are demoliſhed, contrary to the will of the teſtator.

COLLEGE *of Heralds*, commonly called the *Herald's Office*, a corporation founded by charter of Richard III. who granted them ſeveral privileges, as to be free from ſubſidies, tolls, offices, &c. They have a ſecond charter from Edward VI. and a houſe built near Doctor's-Commons, by the earl of Derby, in the reign of Henry VII. was given them by the duke of Norfolk in the reign of queen Mary, which houſe is now rebuilt.

COLLEGIATE CHURCHES, thoſe which though no biſhop's ſee, have the retinue of the biſhop, the canons and prebends. Such are, among us, Weſtminſter, Windſor, Rippon, Wolverhampton, Southwell, Mancheſter, &c. governed by deans and chapters. See DEAN and CHAPTER.

COLLIFLOWER, or CAULIFLOWER. See CAULIFLOWER.

COLLIQUATION, in phyſic, a term applied to the blood, when it loſes its craſis or balſamic texture; and to the ſolid parts, when they waſte away by means of the animal fluids flowing off through the ſeveral glands, and particularly thoſe of the ſkin, faſter than they ought; which occaſions fluxes of many kinds, but moſtly profuſe, greaſy, and clammy ſweats.

COLLIQUATIVE FEVER, in phyſic, a fever attended with a diarrhœa, or profuſe ſweats, proceeding from colliquation.

COLLISION, the ſtriking of one hard body againſt another, or the friction or percuſſion of bodies moving violently in different directions, and daſhing againſt each other. See PERCUSSION.

COLLUSION, a ſecret underſtanding between two parties, who plead or proceed fraudulently againſt each other to the prejudice of a third perſon.

COLLYRIUM, in pharmacy, a topical remedy for diſorders of the eyes; deſigned to cool and repel hot, ſharp humours, which they do more effectually, if aſſiſted by the inward uſe of diuretics at the ſame time.

COLOCYNTHIS, COLOQUINTIDA, or BITTER-GOURD, the dried medullary or pulpy part of a ſpecies of gourd or cucumber, brought from Aleppo.

It is a very ſtrong irritating cathartic; commended by ſome, not only as an efficacious purgative, but likewiſe as an alterative in obſtinate chronical diſorders; by others condemned, as a dangerous and deleterious drug. Thus much is certain, that when given by itſelf, in ſubſtance, in ſuch doſes as to purge effectually, as eight or twelve grains, it operates for the moſt part with great vehemence; diſordering the conſtitution, occaſioning violent gripes, and ſometimes bloody diſcharges. Its principal uſe is as a ſtimulus to other purgatives. The watery decoctions, inſpiſſated, yield a large proportion, half the weight of the colocynth or more, of a mucilaginous extract, which purges ſtrongly, but with much leſs irritation and greater ſafety than the colocynth itſelf, and appears to be the beſt preparation obtainable from this draſtic drug.

COLON, in anatomy, the ſecond of the three large inteſtines, called inteſtina craſſa.

COLON, in grammar, a point or character marked thus (:) ſhewing the preceding ſentence to be perfect or entire, only that ſome remark, farther illuſtration, or other matter connected therewith is ſubjoined.

COLONEL, in military matters, the commander in chief of a regiment, whether horſe, foot, or dragoons.

Lieutenant COLONEL, one who is the ſecond officer in a regiment, at the head of the captains, and commands in the abſence of the colonel.

COLONNADE, in architecture, a periſtyle of a circular figure; or a ſeries of columns diſpoſed in a circle, and inſulated within-ſide.

COLONY, *Colonia*, a company of people tranſplanted into a remote province, to cultivate and inhabit it. Colonies are of three ſorts: the firſt are thoſe that ſerve to eaſe and diſcharge the inhabitants of a country, where the people are become too numerous; the ſecond are thoſe eſtabliſhed by victorious princes in the middle of vanquiſhed nations, to keep them in awe and obedience; and the third ſort, thoſe eſtabliſhed for the promotion of trade, called colonies of commerce; ſuch are thoſe eſtabliſhed by European nations in ſeveral parts of Aſia, Africa, and America.

COLOPHONY, in pharmacy, the caput mortuum remaining after the diſtillation of the atherial oil, being further urged by a more intenſe and long continued fire.

Colophony reduced to powder, is of ſingular advantage in ſurgery, in caſes where the bones are laid bare, or the perioſteum, tendons, and muſcles, injured by burns, corroſions, contuſions, punctures, lacerations, or partial diviſions. It alſo prevents defluxions of ſerum on the joints, and induces cicatrices, and checks the fungous excreſcences of ulcers, if applied in the ſame manner. Beſides its drying, conſolidating, and lenitive qualities, it is an ingredient in ſeveral plaſters and ointments.

COLOSSUS, a ſtatue of a gigantic, or enormous ſize. The moſt famous was the coloſſus of Rhodes, made, in honour of

Apollo, by Chares the diſciple of Lyſippus. It was eighty-ſix feet high, and its thumb ſo large, that few people could fathom it. This ſtatue was placed acroſs the mouth of the harbour at Rhodes, and the ſhips with full ſails paſſed betwixt its legs. It was thrown down by an earthquake 224 years before Chriſt.

COLOUR, in philoſophy, an inherent property in light, exciting different vibrations, according to the different magnitudes of its parts, in the fibres of the optic nerve; which affect the mind with different ſenſations. The philoſophers, before Sir Iſaac Newton's time, ſuppoſed that all light, in paſſing out of one medium into another of different denſity, was equally refracted in the ſame or like circumſtances; but that illuſtrious and accurate author has diſcovered that it is not ſo, but that “There are different ſpecies of light: and that each ſpecies is diſpoſed both to ſuffer a different degree of refrangibility in paſſing out of one medium into another, and to excite in us the idea of a different colour from the reſt; and that bodies appear of that colour which ariſe from the compoſition of the colours the ſeveral ſpecies they reflect are diſpoſed to excite.”

There are abundance of experiments made by Sir Iſaac Newton, and others, for the confirmation of this doctrine.

It is ſufficiently clear that whatever ſpecies of rays are thrown upon any body, they make that body appear of their own colour. Thus minium in red light appears of its own colour; but in yellow light it appears yellow; and in green light green; in blue, blue; and in violet-purple-coloured light it appears of a purple colour: in like manner verdigriſe will put on the appearance of that colour in which it is placed. But each of theſe bodies appears moſt luminous and bright when enlightened with its own colour, and dimmeſt in ſuch as are moſt remote from that.

It is certain therefore each ray is diſpoſed to excite its own colour, which is neither to be altered by refraction nor reflection. Thus much in confirmation of the firſt part of the propoſition, viz. that there are different ſpecies of light, and that each ſpecies is diſpoſed to ſuffer a different degree of refrangibility, and to excite in us the idea of a different colour.

2. That bodies appear of that colour which reſults from a compoſition of thoſe colours which the ſeveral ſpecies they reflect are diſpoſed to excite.

Each ray, whatever be the colour of the body it is reflected from, is able to excite no other idea than that of its own colour; and that coloured bodies reflect not all the different ſorts of rays that fall upon them in equal plenty, but ſome ſorts, viz. thoſe of their own colour, much more copiouſly than others. We will now proceed to ſhew, that the other colours may be produced from a mixture of thoſe ſeven, which rays of light, when ſeparated by a priſm, are diſpoſed to exhibit, viz. red, orange, yellow, green, blue, indigo, and a violet purple. From whence it will be rational to conclude, that bodies appear of that colour which ariſes from the mixture of thoſe which they reflect.

1. All the priſmatic colours, viz. thoſe that are made by the priſm, mixed together, appear white, a little inclining to yellow, ſuch as is that of the ſun's light.

To ſhew this, let a convex lens be placed between the priſm and the paper which receives the image, in order that the rays ſeparated by it may be collected into a focus; and let this focus fall upon the paper, then will the ſpot where it falls appear white. And that the whiteneſs of this focal point is owing to the union of thoſe colours appears from hence, that if we remove the paper from the focal point, and ſuffer the rays to croſs each other in the focus, and if, when they have proceeded to ſome diſtance beyond, they be then received upon the paper, the ſame coloured image will be exhibited, and inverted, becauſe the rays croſs each other in the focus; an evident proof that the whiteneſs in the ſpot was owing to nothing but the mixture of the rays conſtituting the ſeveral colours of the image. But if the rays of any particular colour be intercepted before they are collected in the ſaid ſpot, it then appears not only of a different colour from what it did before, but different from any of the priſmatic colours taken ſeparately. Or if the circumference of a wheel be painted with the priſmatic colours taken in the ſame proportion with reſpect to each other, in which they are exhibited in the image made by the priſm, and the wheel be turned ſwiftly about, the circumference of that wheel ſhall appear white: if they are taken in other proportions the colour of the wheel, when turned about, will vary accordingly. From whence this part of the propoſition is alſo abundantly clear.

No compoſition of theſe colours will produce black; that being no colour but the defect and abſence of all colour whatever. That ſpecies of light which is diſpoſed to ſuffer a greater degree of refraction, requires proportionally leſs obliquity at the ſecond ſurface of any medium to occaſion a total reflection of it there; ſo that it is poſſible that a ray of light may paſs through a medium with ſuch obliquity, that only that part of it which is diſpoſed to exhibit a violet colour ſhould be reflected at the ſecond ſurface, and all the reſt tranſmitted there. This indeed is a neceſſary conſequence of what was obſerved concerning the reflection of light at the ſecond ſurface of any medium, viz. that the reflection of a ray is total, when the obliquity of the incident ray is ſuch, that the angle of refraction ought to be equal to, or exceed a right one. This is a conſequence of that, becauſe the angle of the refraction of the violet-coloured light is larger than the angle of refraction of any other, though their angles of incidence are equal.

From experiments, it appears probable, that it is owing to the different magnitude of the particles, whereof bodies are compoſed, that ſome have a power of reflecting one ſort of rays more copiouſly, and ſome another.

COLOUR, in painting, is applied both to the drugs made uſe of in that art, and to the tints produced by thoſe drugs variouſly mixed and applied.

Colours may be either pigments or fluids. By pigments is meant all ſuch ſolid bodies as require to be mixed with ſome fluid, as a vehicle, before they can be uſed as paints, except in the caſe of crayons, where they are uſed dry. Theſe make the far greater part of the whole; the fluid colours being only a ſmall number employed along with water-colours; and aſphaltum, which is ſometimes employed in oil-painting.

Colours are diſtinguiſhed into ſeveral kinds, according to the vehicles in which they are worked, as oil-colours, water-colours, enamel-colours, &c. The ſame ſorts of pigments, however, are, in many inſtances, employed in more than one kind of painting, as vermillion and lake in ſeveral, and ultramarine in all.

The principal qualities in colours, conſidered with regard to their perfection or faultineſs, are two; purity of colour, and durableneſs: purity of colour is, by the painters, called *brightneſs*, and the defect of it *foulneſs*, or ſometimes the breaking the colour: durableneſs is called *ſtanding*, and the negative, or want of it, *flying*, or flying off.

Brightneſs and ſtanding well are the only properties which are neceſſary to the perfection of every kind of colours, and they equally relate to all; but there are others which are eſſential to many ſorts, with regard only to particular purpoſes and uſes. As tranſparancy, and opacity, that of drying well, and as it is called, not fattening; and, laſtly thoſe diſtinguiſhed by the names of warmth and coolneſs: all which are well known to painters.

The colours uſed in all the ſeveral kinds of painting, except ſome peculiar to enamel, are as follow:

Claſs I. Red—Vermilion, native cinnabar, red lead, ſcarlet oker, common Indian red, Spaniſh brown, terra de Sienna burnt; theſe are ſcarlet, or tending to the orange. Carmine, lake, roſe-pink, red oker, Venetian red; theſe tend to the crimſon or to the purple.

Claſs II. Blue—Ultramarine, ultramarine aſhes, Pruſſian blue, verditer, cendre blue, or ſanders blue, indigo, ſmalt, bice, litmus, or lacmus.

Claſs III. Yellow—King's yellow, Naples yellow, yellow oker, Dutch pink, Engliſh pink, light pink, gamboge, meſticot, common orpiment, gall-ſtone, terra de Sienna unburnt, turpith mineral, yellow berry-waſh, turmeric waſh, tincture of ſaffron.

Claſs IV. Green—Verdigriſe, diſtilled verdigriſe, or cryſtals of verdigriſe, Pruſſian green, terra vert, ſap green.

Claſs V. Orange—Orange lake.

Claſs VI. Purple—True Indian red, archal, logwood waſh.

Claſs VII. Brown—Brown pink, biſtre, brown oker, umbre, Cologne earth, aſphaltum, Spaniſh juice, or extract of liquorice.

Claſs VIII. White—White flake, white lead, calcined hartſhorn, pearl-white, troy-white, egg-ſhell white.

Claſs IX. Black—Lamp black, ivory black, blue black, Indian ink. See each of the above under its proper article.

Theſe are all the colours at preſent in uſe in this country, in any kind of painting, except ſuch as are peculiar to enamal; in which kind of painting, as but few of theſe are capable of combining with glaſs, and enduring the neceſſary heat without changing their nature, or being deſtroyed, others are employed more ſuitable to vitrification: for which, ſee ENAMEL *Painting*.

Theory for mixing of COLOURS. There are two things to be principally conſidered in regard to colours; namely, the hue, and the ſtrength of light and ſhadow: for as different colours, ſuppoſe red and green, may have the ſame ſtrength of light, ſo two things, that are one of them much darker than the other, may ſtill have the ſame hue, as light blue and a dark blue.

With reſpect to the hue, theſe two things are to be conſidered: 1°. The ſpecies of colour; and, 2°. The perfection and imperfection of colour under the ſame ſpecies. Colours differ in ſpecies, as blue and red, and colours of the ſame ſpecies differ in degrees of perfection, as the red of a field poppy is much more perfect than the red of a brick. This quality of perfection and imperfection in the colours, by the painters, is expreſſed by the terms bright, or clean or ſimple, and broken, which is taken from their method of making the imperfect colours by the mixture of other colours, which is called breaking the colours. With reſpect to this quality of colours, Sir Iſaac Newton, in his Treatiſe on Optics, ſhews that every ray of light has its proper colour, which it always carries with it, and never loſes, in whatever manner it happens to be reflected or refracted. Theſe natural colours of the rays are the bright ſimple colours, and the natural order of them, as they appear when they are ſeparated by the refraction of a priſm, is red, orange, yellow, green, blue, indigo, violet: all the leſs perfect or broken colours are made by the compoſition and mixture of theſe ſimple colours, as yellow rays mixed with blue rays make a green, but not ſo perfect as the ſimple natural rays that are green; and red and yellow rays make an orange colour, but not ſo perfect as the natural orange-coloured rays. And by a juſt proportion of all the natural rays together, is produced whiteneſs, which is indifferent to all the ſimple colours, and cannot be ſaid to incline more to one colour than to another. By white is to be underſtood any colour between the lighteſt white and the darkeſt black; for as we are not now conſidering the degrees of light and ſhade, all the colours from black to white are to be conſidered as of the ſame hue.

According to this obſervation of the nature of whiteneſs, it appears that the broken colours are a medium between the ſimple colours and white; and the more broken a colour is, the nearer it is to white, and the further it is from white, the more ſimple it is.

COLOUR, in heraldry. The colours generally uſed in heraldry are red, blue, black, green, and purple, which heralds call gules, azure, ſable, vert, or ſinople, and purpure. Tenne, or tawney, and ſanguine, are not ſo common. As to yellow and white, called or and argent, they are metals, not colours. Theſe metals and colours are ſometimes alſo expreſſed in blazon by the names of precious ſtones, and ſometimes by thoſe of planets, or ſtars.

COLOURS *uſed in Dying*. There are in the art of dying five colours, called ſimple, primary, or mother colours, from the mixture of which all other colours are formed; theſe are blue, red, yellow, brown, and black. Of theſe colours, variouſly mixed and combined, they form the following colours, panſy, blue, and red; from the mitxure of blue and ſcarlet are formed amaranth, violet, and panſy; from the ſame mixture of blue, crimſon, and red, are formed the columbine or dove-colour, purple, crimſon, amaranth, panſy, and crimſon-violet.

Here it is to be obſerved, that they give the name crimſon to all colours made of cochineal.

Of blue and red madder is dyed purple, pepper-colour, tan colour, and dry-roſe colour.

The ſame blue, with red, half in grain, makes amaranth, tan colour, and dry-roſe colour.

Blue and half red crimſon compoſe amaranth, tan colour, dry-roſe, a brown panſy, and ſun-brown.

Blue and yellow mixed together compoſe a yellow-green, ſpring-green, graſs-green, laurel-green, brown-green, dark-green; as well as ſea-green, parrot-green, cabbage-green, &c. theſe three laſt colours are to be leſs boiled than the reſt.

It is to be obſerved, that as to green there is no ingredient or drug in nature that will dye it, but the ſtuffs are dyed twice, firſt in blue, then in yellow.

Blue and brown. Theſe two colours are never mixed alone; but with the addition of red, either of madder or cochineal, they form ſeveral colours.

Red and yellow. All the ſhades compoſed of theſe two colours, as gold-yellow, aurora, marygold, orange, nacarat, granat-flower, flame colour, &c. are made with yellow and red of madder; ſcarlet being leſs proper as well as too dear.

Red and brown. Of theſe two colours are formed cinnamon colour, cheſnut, muſk, bears-hair, and even purple, if the red be that of madder.

Yellow and brown. The colours formed from theſe two are all the ſhades of feuille-mort and haircolours.

But this may be taken notice of, that though it be ſaid that there are no colours or ſhades made from ſuch and ſuch mixtures, it is not meant that none can be made, but that they are more eaſily formed from a mixture of other colours.

COLOUR, in law, a plauſible plea, tho' really falſe.

COLOURING, among painters, the manner of applying and conducting the colours of a picture; or the mixtures of light and ſhadows formed by the various colours employed in painting. The colouring is one of the chief branches in painting, which art is, by Mr. Felibien, divided into three parts, the deſign, the compoſition, and the colouring. See PAINTING.

Though the colouring is moſt ſtriking, yet, among maſters, it always gives place to the exactneſs of the deſign. According to M. de Piles, the word colouring, in a more limited ſenſe, is chiefly applicable to a hiſtory-piece, ſcarce at all to landſcapes: he adds, that the term relates more immediately to the carnations than to any thing elſe. The colouring, in its general ſenſe, comprehends whatever relates to the nature and union of colours; their agreement or antipathy; how to uſe them to advantage in light and ſhadow, ſo as to ſhew a relievo in the figures, and a ſinking of the ground; what relates to the aerial perſpective, that is, the diminution of colours by means of the interpoſition of the air; the various accidents and circumſtances of the lumiuary, and the medium; the different light both of the bodies illuminating and illuminated; the reflections, ſhadows, and different views with regard to the poſition of the eye, or the object; what produces ſtrength, boldneſs, ſweetneſs, &c. in paintings, well coloured; the various manner of colouring, both in figures, landſcapes, &c.

The *Coloris*, or colouring, is different from colour; the latter renders the object ſenſible to the eye; the former is that by which the painter knows how to imitate the colour of all natural objects, by a judicious mixture of the ſimple colours upon his pallet: it teaches the manner in which colours are to be uſed for producing thoſe fine effects of the *chiaro obſcuro*, light and ſhade, which add boldneſs and a kind of relievo to the figures, and ſhew the remoter objects in their juſt light.

For the effects of colours, painters regard either the union or the œconomy: with reſpect to the firſt, care muſt be taken that they be laid ſo as to be ſweetly united under the briſkneſs of ſome principal one; that they participate of the prevailing light of the piece; and that they partake of each other by the communication of light and the help of reflection.

COLOURING *and non colouring Drugs.* Into theſe dyers diſtinguiſh their ingredients: the firſt are applicative, and communicate their colours to the matters boiled in them, or paſſed through them, as woad, ſcarlet-grain, cochineal, indigo, madder, turmeric, &c. The ſecond ſerve to prepare and diſpoſe the ſtuffs, &c. and to extract the colour out of the colouring ingredients; as alum, ſalt or cryſtal of tartar, arſenic, realgal, ſalt-petre, common ſalt, ſal ammoniac, ſal gemmæ, agraic, ſpirit of wine, bran, peas-flour, wheat, ſtarch, lime, and aſhes.

COLT, in zoology, the young of the horſe-kind. See FOAL.

COLT's FOOT, in botany, the tuſſilago. See TUSSILAGO.

COLUMBINE, *Aquilegia*, in botany. See AQUILEGIA.

COLUMBINE-*Colour*, or dove-colour, among painters, a kind of violet.

COLUMN, in architecture, a round pillar, to ſupport and adorn a building compoſed of a baſe, a ſhaft, and a capital. As every fulcrum is ſo much the more perfect, as it is firm, or carries the appearance of firmneſs; hence all columns ought to have their baſe broader than themſelves. See BASE.

As a cylinder and a quadrangular priſm are more eaſily removed out of their place than a truncated cone, or a pyramid on the ſame baſe, and of the ſame altitude, the figure of columns ought not to be cylindrical, but grow leſs and leſs, like a truncated cone. Again, as columns are more firm if their diameter bears a greater proportion to their height than if it bore a leſs, the greater ratio is to be choſen where a large weight is to be ſuſtained; and leſs, where a ſmall weight is to be ſupported. Further, as the deſign of a column is to ſupport a weight, it muſt never be ſuppoſed without an entablature.

Columns are different in the different orders of architecture, and may be conſidered with regard to their matter, conſtruction, form, diſpoſition, and uſe. With reſpect to the order, we have

Tuſcan COLUMN, that which has ſeven diameters in height, and is the ſhorteſt and moſt ſimple of all the columns. See TUSCAN. Its diminution is one fourth;

that is, the diameter at top is three fourths of the diameter juſt above the baſe.

Doric COLUMN has eight diameters in height, and its capital and baſe more enriched with mouldings than the Tuſcan. It diminiſhes one fifth part of the diameter at the baſe. See DORIC.

Ionic COLUMN has nine diameters in height, and differs from the others by the volutes in its capital, and by its baſe. See IONIC.

Corinthian COLUMN, the richeſt and moſt delicate of all, has ten diameters in height, and its capital adorned with two rows of leaves with caulicoles, from whence ſpring ſmall volutes. It diminiſhes one ſeventh part of the diameter. See CORINTHIAN.

Compoſite COLUMN, has ten diameters in height, and two rows of leaves in its capital, with angular volutes like the Ionic. It diminiſhes one eighth part of the diameter of the baſe. See COMPOSITE.

It may be obſerved, that different authors give different heights and proportions to columns of the ſame order, and that frequently the ſame author takes the liberty of diſpenſing with his own rules; but the heights and proportions exhibited above are a mean between the extremes of all the reſt.

COLUMNS *with regard to their Matter*, are:

Fuſible COLUMN, which comprehends not only columns of various metals, and other fuſible matter, as glaſs, &c. but alſo thoſe of ſtone, ſaid to be caſt, the ſecret of which ſome believe to have been known to the ancients.

Hydraulic COLUMN, that whoſe ſhafts appear to be of cryſtal; being formed by a number of little threads of water, falling from holes made in a girt of metal, at equal diſtances, by means of a pipe mounting through the middle of it. It alſo denotes a column from whoſe top proceeds a jet 'deau, to which the capital ſerves as a baſon, whence the water deſcends by a little pipe, which turns ſpirally round the ſhaft.

Moulded COLUMN, that made by impaſtation of gravel and flints of divers colours, bound together with a cement.

Water COLUMN, that whoſe ſhaft is formed of a large jet d'eau, which ſpouting out water violently from the baſe, drives it within the tambour of the capital, which is hollow, and in falling down it reſembles a column of liquid cryſtal.

COLUMNS, *with regard to their Conſtruction.*

Cabled or *Rudented*, COLUMN, that having projectures in form of cables, in the naked of the ſhaft, each cable having an effect oppoſite to that of a fluting, and accompanied with a little liſt on each ſide.

Coloſſal COLUMN, one of ſo large a ſize as not to enter any ordinance of architecture, but deſigned to be placed ſolitary in the middle of a ſquare, &c. Such is the Trajan column.

Corollotic COLUMN, that adorned with foliages, turned ſpirally round the ſhaft, or in form of crowns and feſtoons: they are very proper for decorations of theatres.

Diminiſhed COLUMN, that which has no ſwelling, but begins to taper from the baſe, in imitation of trees.

Geminated COLUMN, that whoſe ſhaft is formed of three ſimilar and equal ſides or ribs of ſtone, fitted within one another, and faſtened at bottom with iron pins, and at top with cramp irons: it ought to be fluted, that the joints may be leſs diſcernible.

COLUMN *of Joinery*, that made of ſtrong timber-boards joined together: it is hollow, turned in the lathe, and uſually fluted: ſuch are the columns of moſt altar-pieces.

COLUMN *of Maſonry*, is made of rough ſtone, well laid and covered with plaſter; or of bricks, laid triangularwiſe, and covered with ſtucco.

COLUMN *of Tambours* or *Bands*, that whoſe ſhaft is formed of ſeveral courſes of ſtone, or blocks of marble, leſs high than the diameter of the column.

COLUMN *in Truncheons* or *Pieces*, conſiſts of two, three, or four pieces of ſtone or metal, differing from the tambours, as being higher than the diameter of the column.

COLUMNS *with regard to their Form*, are:

Fluted COLUMNS, called alſo channelled and ſtriated columns, thoſe whoſe ſhafts are adorned with flutes or channellings, either from top to bottom, or only two thirds of their height.

Gothic COLUMN, a round pillar, either too ſhort for its bulk, or too ſlender for its height, having ſometimes twenty diameters, without either diminution or ſwelling, conſequently differing widely from the proportions of the antique.

Hermetic COLUMN, a kind of pilaſter, in manner of a terme, having the head of a man in lieu of a capital. It is ſo called becauſe the ancients placed on the top of ſuch columns the head of Mercury.

Maſſive COLUMN, one too ſhort for the order, the capital of which it bears: it likewiſe comprehends Tuſcan and Ruſtic columns.

Oval COLUMN, that whoſe ſhaft has a flatneſs, its plane being made oval, to reduce the projecture.

Paſtoral COLUMN, that whoſe ſhaft is formed in imitation of a trunk of a tree, with bark and knots. It may be uſed in the gates of parks and gardens, and in the decoration of paſtoral ſcenes.

Serpentine COLUMN, that formed of three ſerpents twiſted together, the heads of which ſerve as a capital; it is now called the taliſman, or enchanted column.

Swelled COLUMN, that which has a bulging in proportion to the height of the ſhaft. This practice obtains among the modern architects, but ſeems to have been unknown to the ancients.

Twiſted COLUMN, that whoſe ſhaft is twiſted round in form of a ſcrew, with ſix circumvolutions, being ordinarily of the Corinthian order. Sometimes the twiſted column is in form of two or three ſlender ſhafts twiſted round, ſo as to leave a cavity in the middle.

COLUMNS, *with regard to their Diſpoſition.*

Angular COLUMN is an inſulated one, placed in the corner of a portico, or inſerted in the corner of a building, or even a column that flanks any angle of a polygon.

Attic COLUMN, an inſulated pilaſter, having four equal faces, and of the higheſt proportion.

Cantoned COLUMNS, thoſe columns engraved in the four corners of a ſquare pillar, to ſupport four ſprings of an arch.

Coupled COLUMNS, thoſe diſpoſed two and two, ſo as almoſt to touch each other at their baſes and capitals.

Doubled COLUMNS, one column joined with another in ſuch a manner that the two ſhafts penetrate each other with a third of their diameter.

Engaged COLUMN, that which enters in a wall, with one third or one fourth of its diameter.

Grouped COLUMNS, thoſe placed on the ſame pedeſtal or ſocle, either by three and three, or four and four.

Inſulated COLUMN, one ſtanding free and detached from every other body.

Median COLUMNS, a name given by Vitruvius to the two columns in the middle of a porch, which have their intercolumniation larger than the reſt. The term may alſo be applied to the middle row of columns in a frontiſpiece adorned with three orders.

Niched COLUMN, that whoſe ſhaft enters with half its diameter into a wall, hollowed out for its reception with its plane parallel to the projecture of the tore.

COLUMNS, *with regard to their Uſe*, are either, 1ſt, Aſtronomical columns, ſuch as that at Paris, erected for aſtronomical obſervations. 2. Chronological column. 3. Funeral column, which generally bears an urn, and has its ſhaft overſpread with ſymbols of grief and of immortality. 4. Gnomonic column, a cylinder, upon which the hour of the day is repreſented by the ſhadow of a ſtyle: of theſe there are two kinds; in the one the ſtyle is fixed, and the hour-lines are no more than the projection of a vertical dial upon a cylindrical ſurface: in the other the ſtyle is moveable, and the hour-lines are drawn to the different heights of the ſun in the different ſeaſons of the year. 5. Hiſtorical column, that whoſe ſhaft is adorned with a baſſo relievo, running in a ſpiral line its whole height, and containing the hiſtory of ſome great perſonage. 6. Hollow column, that which has a ſpiral ſtair-caſe within-ſide, for the conveniency of aſcending to the top. 7. Indicative column, that which ſerves to ſhew the tides along the ſea-coaſts. 8. Inſtructive column, that which conveys ſome precept or inſtruction, ſuch as that raiſed by the ſon of Piſiſtratus at Athens, containing the rules of agriculture. 9. Itinerary column, one with ſeveral faces placed in the croſſing of ſeveral roads, ſerving to ſhew the different routes by the inſcriptions engraved on its ſeveral faces. 10. Lactary column, at Rome, a column, according to Feſtus, in the herb-market, in the pedeſtal of which was a cavity, wherein young children, abandoned by their parents, through poverty or inhumanity, were expoſed to be educated at the expence of the public. 11. Legal column, among the Lacedemonians, that erected in a public place, upon which were engraven the fundamental laws of the ſtate. 12. Limitrophous, or boundary column, that which ſhews the limits of a kingdom, or country, conquered. Thoſe called the Columns, or Pillars of Hercules, are two very ſteep mountains, in the ſtreights of Gibraltar. 13. Luminous column, one formed in a cylindrical frame, mounted and covered over with oiled paper or gauze, ſo that lights being diſpoſed in ranks within over each other, the whole appears to be on fire. 14. Manubiary column, a column adorned with trophies, built in imitation of trees, whereon the ſpoils of enemies were anciently hung. 15. Memorial column, that raiſed on occaſion of any remarkable event, as the Monument in London, built to perpetuate the memory of the burning of that city in 1666. 16. Menian column, any column that ſupports a balcony, or meniana. 17. Miliary column, a column of marble, raiſed, by order of Auguſtus, in the middle of the Roman forum, from whence, as a center, the diſtances of the ſeveral cities of the empire were reckoned by other miliary columns, diſpoſed at equal diſtances on all the grand roads. 18. Roſtral column, that adorned with the beaks, or prows of ſhips, &c. erected either in memory of a naval victory, or in honour of ſome admiral, &c. 19. Statuary column, that which ſupports a ſtatue. 20. Symbolical column, that repreſenting by ſymbols ſome particular country, or ſome memorable action. 21. Triumphal column, that erected by the ancients in honour of an hero; the joints of the ſtones or courſes of which were covered with as many crowns as he had made military expeditions. 22. Zoophoric column, a kind of ſtatuary column, bearing the figure of ſome animal.

COLUMN, among printers, half a page, when the page is divided into two parts from top to bottom.

COLUMN, in the military art, a long deep file of troops or baggage.

The firſt and ſecond lines of an army, as they are encamped, make generally two columns on a march, filing off either to the right or left: ſometimes the army marches in four, ſix, or eight columns, as the ground will allow; and each column is led by a general officer.

COLURES, in aſtronomy and geography, two great circles ſuppoſed to interſect each other at right angles, in the poles of the world, and to paſs through the ſolſtitial and equinoctial points of the ecliptic.

That which paſſes through the two equinoctial points, is called the equinoctial colure, and determines the equinoxes; and the other, which paſſes through the poles of the ecliptic, is called the ſolſtitial colure, becauſe it determines the ſolſtices. See EQUINOX and SOLSTICE.

COMA, or COMA-VIGIL, a preternatural propenſity to ſleep, when nevertheleſs, the patient does not ſleep, or if he does, awakes immediately, without any relief. This diſorder is always ſymptomatic, and often attends acute, burning, and malignant fevers; as alſo an inflammation of the dura mater, and uſhers in a phrenzy. Sometimes it attends a hemiplegia. For the cure of the coma-vigil, if the fever has not continued above the third or fourth day, it is expedient to take away a large quantity of blood; then the body, if coſtive, muſt be opened with clyſters, which muſt not be very acrid: afterwards diluters and refrigerants ſhould be given to moderate the febrile heat, ſuch as abſorbent powders, gentle nitrous medicines, taken in a draught with diaphoretic antimony, &c.

COMA SOMNOLENTUM is when the patient continues in a profound ſleep, and when awakened, immediately relapſes, without being able to keep open his eyes. This is a primary diſeaſe, and muſt have a cauſe which obſtructs the paſſage of the nervous fluid from the cortical part of the brain to the medulla oblongata, throughout the whole brain.

A coma ſomnolentum is divided into ſerous and ſanguine. The firſt requires the natural ſerous evacuations to be reſtored or promoted; gouty fits are to be invited. Sternutatories are alſo of great uſe, as they diſcharge the ſerum through the noſe, and ſtimulate the nerves: and when a viſcid phlegm offends the ſtomach, vomits are uſeful, with powder of ſquills, or emetic tartar, with a laxative portion. In a ſanguine coma ſomnolentum, when the blood circulates ſlowly, or ſtagnates in the head, as in hypochondriac and ſcorbutic caſes, all hot ſpirituous remedies are as bad as poiſon; but bleeding, clyſters, gentle laxatives, cooling and nervous powders, are uſeful.

COMA BERENICES, Berenice's hair, in aſtronomy, a conſtellation in the northern hemiſphere, compoſed of ſtars near the lion's tail.

This conſtellation conſiſts of three ſtars, according to Ptolemy; of thirteen, according to Tycho; and of forty, in the Britannic Catalogue.

COMB, an inſtrument to clean, untangle, and dreſs flax, wool, hair, &c.

Combs for wool are prohibited to be imported into Britain.

COMB is alſo the creſt, or red fleſhy tuft, growing upon a cock's head.

COMBAT, an engagement, or a difference decided by way of arms.

COMBAT, in our ancient law, a formal trial of ſome doubtful cauſe or quarrel by the ſwords or battons of two champions. This form of proceeding was very frequent, not only in criminal, but in civil, cauſes; being built on a preſumption that God would never grant the victory but to him who had the beſt right. The laſt trial of this kind in England, was between Donald lord Ray, appellant, and David Ramſay, Eſq. defendant, when after many formalities, the matter was referred to the king's pleaſure.

COMBATANT, in heraldry, a term for two beaſts, as lions, &c. borne in a coat of arms, in a fighting poſture, with their faces to each other.

COMBINATION, an aſſemblage of ſeveral things by two and two: but more particlarly uſed in mathematics, to denote the variation or alteration of any number of quantities, letters, ſounds, or the like, in all the different manners poſſible. F. Merſenne gives us the combinations of all the notes and ſounds in muſic, as far as 64, the ſum whereof amounts to 90 figures, or places.

The number of poſſible combinations of the 24 letters of the alphabet, taken firſt two by two, then three by three, &c. according to Mr. Preſtet's calculation, amount to 1391724288887252999425128493402200. F. Truchet, in the Memoirs of the French Academy, ſhews, that two ſquare pieces, each divided diagonally into two colours, may be arranged and combined ſixty-four different ways, ſo as to form ſo many different kinds of chequer-work; which appears very ſurpriſing when we conſider that two letters, or figures can only be combined twice.

Problem I. Any number of quantities being given, together with the number in each combination, to find the number of combinations.

One quantity, we obſerve, admits of no combination; two, *a* and *b*, of one: of three, *a b c*, there are three combinations, viz. *a b*, *a c*, *b c*; of four, ſix, *a b*, *a c*, *b c*, *a d*, *b d*, *c d*; of five, ten, *a b*, *a c*, *b c*, *a d*, *b d*, *c d*, *a e*, *b e*, *c e*, *d e*: whence it appears that the number of combinations proceed as 1, 3, 6, 10, 15, &c. wherein if we have *n* for the number of terms or quantities to be combined, we ſhall have $\frac{n}{1}\times\frac{n-1}{2}$ for all the different pairs that can be taken in the number of quantities *n*. If the propoſed combinations are to be taken three by three, $\frac{n}{1}\times\frac{n-1}{2}\times\frac{n-3}{3}$ will expreſs the number of combinations ſought: but if they are to be taken by fours, $\frac{n}{1}+\frac{n-1}{2}+\frac{n-2}{3}\,\frac{n-3}{4}$ will be the anſwer; and univerſally, if *p* be put for the number of quantities to be taken each time, then will $\frac{n}{1}\times\frac{n-1}{2}\times\frac{n-2}{3}\times\frac{n-3}{4}\times\frac{n-4}{5}$ &c. continued to *p* terms, repreſent the number of combinations of *p* things in *n*.

Example. Let the number of quantities to be combined be 8, and 4 the number of them to be taken: then by expounding *n* by 8, and *p* by 4, we ſhall have $8\times\frac{7}{2}+\frac{6}{3}\times\frac{5}{4}$ or 70, for the number of combinations required.

The number of all the poſſible combinations, beginning from the combinations of every two, will, by writing ſucceſſively for *p* the numbers 2, 3, 4, 5, &c. be $\frac{n}{1}\times\frac{n-1}{2}\times\frac{n}{1}+\frac{n-1}{2}\times\frac{n-2}{3}\times\frac{n}{1}\times\frac{n-1}{2}\times\frac{n-2}{3}\times\frac{n-3}{4}$ &c. which is well known to be the ſum of the unciæ of the binominal 1 + 1, raiſed to the *n* power, and abridged of the exponent of the power increaſed by unity *n* + 1; therefore the number of all the poſſible combinations will be expreſſed by $2n-n-1$.

COMBINATORY, ſomething belonging to combination. See the preceding article.

COMBINATORY *Diſtillation*, a method of rectifying ſpirits, much practiſed by diſtillers, by diſtilling ſeveral ingredients along with the ſpirits; ſuch are alcaline ſalts, and ſpirits, and other ſaline bodies capable of giving the ſpirits a good flavour. This method is condemned by Dr. Shaw, becauſe theſe ingredients mix themſelves ſo intimately with the ſpirits, as not to be eaſily ſeparated again: hence, inſtead of rectifying or improving, they prevent the true and genuine taſte of the ſpirits.

COMEDY, a kind of dramatic poetry, which gives a view of common and private life, recommends virtue, and expoſes the vices and follies of mankind in an humorous and merry way. Critics are much divided about the nature of comedy. Ariſtotle calls it an imitation of the worſt, or rather, of the loweſt, claſs of perſons, by ways of ridicule. Mr. Corneille finds fault with this, and maintains that the actions of king's themſelves may enter comedy, provided they be ſuch as are not very momentous, unattended with any conſiderable danger. Mr. Congreve ſeems pretty much of the ſame opinion: but Mr. Dacier is of the contrary opinion: he maintains, that comedy allows of nothing grave or ſerious, unleſs it be turned to ridicule; and that rallery and ridicule are its only proper and genuine marks. Thus different are critics on the nature of comedy: nor are they better agreed concerning the characteriſtic which diſtinguiſhes it from tragedy. Some diſtinguiſh it by the lowneſs of the ſubject; others by the ridiculous light it is ſet in. According to F. Boſſu, comedy differs from tragedy in this, that the comic writer invents both the names of his perſons, and the action which he preſents; whereas the tragic-writers invent only the latter; the former they are to take from hiſtory. Comedy has parts of quality and parts of quantity. Of the firſt kind there are four eſſential, the fable, the manners, the ſentiments, and the diction; to which two are added, which only relate to the repreſentation, viz. the muſic and decoration. See FABLE, MANNERS, &c.

The parts of quantity are alſo four. 1. The entrance. 2. The working up of the plot. 3. The full growth of the plot, or the counter-turn. 4. The diſcovery, or unravelling of the plot. Theſe in the language of the ancients, are called the protaſis, epitaſis, cataſtaſis, and cataſtrophe. See PROTASIS, EPITASIS, ACT, &c. With regard to the various revolutions comedy has undergone, it is commonly diſtinguiſhed into three kinds, viz. the ancient, the middle, and new. This laſt kind alone was received among the Romans, who nevertheleſs made a new ſubdiviſion of it into ancient, middle, and new, according to the various periods of the commonwealth. Among the ancient comedies were reckoned thoſe of Livius Andronicus; among the middle thoſe of Pacuvius; and among the new ones, thoſe of Terence. They likewiſe diſtinguiſhed comedy according to the quality of the perſons repreſented, and the dreſs they wore, into togatæ, prætexatæ, trabeatæ, and tabernariæ, which laſt agrees pretty nearly with our farces. Among us, comedy is diſtinguiſhed from farce, as the former repreſents nature as ſhe is; the other diſtorts and overcharges her. They both paint from the life, but with different views; the one to make nature known, the other to make her ridiculous.

COMET, in aſtronomy, an opaque, ſpherical, and ſolid body like the planets; and like them performs its revolutions about the ſun in an elliptical orbit, which has the ſun in one of its foci. The particulars in which comets differ from the planets are, that they move in various directions, ſome the ſame way with the planets, others the contrary; neither are their motions confined within the zodiac, their orbits admitting of any inclination to the ecliptic whatever: and the eccentricity of their orbits is ſo very great, that ſome of the comets perform the greateſt part of their motion almoſt in right-lines, tending in their approach to the ſun almoſt directly towards it, after which they paſs by it, and when they leave it, move off again nearly in a right line, till they are out of ſight, as if they were haſtening back to the fixed ſtars, and return not till after a period of many years.

Comets were looked upon by the ancients in general, as nothing more than ſublunary vapours, or fiery meteors; and conſequently little notice was taken of them, till the year 1577, when Ticho Brahe ſeriouſly purſuing the ſtudy of the ſtars, and being provided with large inſtruments fit for making celeſtial obſervations, with far greater care and certainty than the ancients could ever hope for; there appeared a very remarkable comet; to the obſervation of which Ticho vigorouſly applied himſelf; and found by many juſt and faithful trials, that it had not a diurnal parallax that was at all perceptible, and conſequently was not only no aereal vapour, but alſo much higher than the moon; nay, might be placed amongſt the planets for any thing that appeared to the contrary; the cavilling oppoſition made by ſome of the ſchool-men in the mean time being to no purpoſe. Next to Ticho came the ſagacious Kepler. He, having the advantage of Ticho's labours and obſervations, found out the true phyſical ſyſtem of the world, and greatly improved the ſcience of aſtronomy. This great aſtronomer had an opportunity of obſerving two comets, one of which was a very remarkable one; and from the obſervations of theſe (which afforded ſufficient indications of an annual parallax) he concluded, that the comets moved freely through the planetary orbs, with a motion not much different from a rectilinear one; but of what kind he could not then preciſely determine. Next Hevelius, (a noble emulator of Ticho Brahe) following Kepler's ſteps, embraced the ſame hypotheſis of the rectilinear motion of comets, himſelf accurately obſerving many of them; yet he complained that his calculations did not perfectly agree to the matter of fact in the heavens; and was aware that the path of a comet was bent into a curve line towards the ſun: at length came that prodigious comet of the year 1680, which deſcending, as it were, from an infinite diſtance perpendicularly towards the ſun, aroſe from him again with as great a velocity. This comet, which was ſeen for four months ſucceſſively, by the very remarkable and peculiar curvity of its orbit, above all others, gave the fitteſt occaſion for inveſtigating the theory of its motion. And the Royal Obſervatories at Greenwich and Paris, having been for ſome time founded, and committed to the care of moſt excellent aſtronomers, the apparent motion of this comet was moſt accurately, (perhaps as far as human ſkill could extend) obſerved by Mr. Flamſteed and Mr. Caſſini.

Not long after the illuſtrious Newton, writing his Methematical Principles of Natural Philoſophy, demonſtrated not only that what Kepler had found did neceſſarily obtain in the planetary ſyſtem; but alſo that all the phænomena of comets would naturally follow from the ſame principles: which he abundantly illuſtrated by the example of the aforeſaid comet of the year 1680, ſhewing at the ſame time a method of delineating the orbits of comets geometrically.

That comets are not aereal vapours, or even formed by exhalations from the ſun and planets, Sir Iſaac Newton has clearly ſhewed; by proving that the comet of 1680, in its paſſage through the ſolar regions, would have been diſſipated had it conſiſted of ſuch: for the heat of the ſun, it is allowed, is as the denſity of his rays, i. e. reciprocally as the ſquares of the diſtances of places from the ſun: wherefore, ſince the diſtance of that comet in its perihelion, December the 8th, was obſerved to be to the diſtance of the earth from the ſun, nearly as 6 to 1000; the ſun's heat in the comet, at that time, was to his heat with us at Midſummer, as 1000000 to 36, or 28000 to 1. It is found by experiment, that the heat of boiling water is little more than three times the heat of our dry earth, when expoſed to the Midſummer's ſun; and aſſuming the heat of red-hot iron to be about three or four times as great as that of boiling water; he thence concludes, that the heat of the dried earth, or body of the comet in its perihelion, muſt be near 2000 times as great as that of red-hot iron.

Such an immenſe heat once acquired in its perihelion, the comet muſt be a long time in cooling again. The ſame author computes, that a globe of red-hot iron, of the dimenſions of our earth, would ſcarce be cool in 50000 years. If then the comet be ſuppoſed to cool 100 times as faſt as red-hot iron; yet, ſince its heat was 2000 times greater, ſuppoſing it of the bigneſs of the earth, it would not cool in a million of years.

There is one remarkable phœnomenon which ſometimes, though very ſeldom, accompanies the paſſage of comets in their orbits, and that is what may be called cometary eclipſes; for when a comet comes in the ſyzigial line of the ſun and the earth, it muſt very much abate the ſolar light, though its viſual diameter may not equal it. But if it ſhould equal or exceed it, and ſuch have made their appearance, if their courſe be not exceedingly rapid, the ſun will be darkened, through a much greater extent of earth, for a much longer duration, and attended with a more remarkable obſcurity, than any circumſtances of a ſolar eclipſe ever can be; ſuch probably might be the Egyptian darkneſs in the Jewiſh hiſtory, that of Jupiter and Alcmena in the Grecian, and of Auguſtus in the Roman; beſides others unrecorded in the annals of hiſtory.

Aſtronomers make uſe of ſeveral methods for inveſtigating the apparent place of a comet, one whereof is the following: They obſerve what two ſtars are directly one on one ſide, and the other on the other; which is done by holding up a thread between the eye and the two ſtars, and extending it in ſuch a manner, as that it ſhall ſeem to croſs each ſtar; then they look out for two other ſtars in a like ſituation, that the comet may appear in a line drawn from one to the other, which are found as before; then they extend a thread upon the celeſtial globe, from one of the two firſt ſtars to the other, and another thread from one of the laſt ſtars to the other: and the point on the globe where the threads croſs, is the apparent place of the comet at the time the obſervation was made. This they do daily, and ſo trace out its apparent courſe in the heavens.

COMETARIUM, a curious machine, exhibiting an idea of the motion of a comet about the ſun.

COMITIA, in Roman antiquity, an aſſembly of the people, either in the comitium or campus-martius, for the election of magiſtrates, or conſulting on the important affairs of the republic.

COMITIUM, in Roman antiquity, a large hall in the forum, where the comitia were ordinarily held.

COMMA, among grammarians, a point or character marked thus (,) denoting a ſhort ſtop, and to divide the members of a period.

COMMA, in muſic, an interval equal to the difference of the tone major and minor, and expreſſed by the ratio 81 : 80. See INTERVAL and TONE.

COMMAND, in the royal navy, the rank and power of an officer who has the management of a ſhip of war under twenty guns, called a ſloop, alſo that of an armed ſhip or bomb veſſel.

COMMANDER, an officer who governs a ſloop of war, armed ſhip, or bomb-ketch, and who has the rank of major in the army.

COMMANDING GROUND, in the military art, an eminence overlooking any poſt or ſtrong place.

COMMANDMENT, in a legal ſenſe, is uſed variouſly: it is ſometimes taken for the commandment of the king; as when, upon his own motion, and from his own mouth, he orders any perſon to priſon. Sometimes it is uſed for the commandment of the juſtices: this commandment is either abſolute, or ordinary: abſolute is when a juſtice commits a perſon to priſon for contempt, &c. upon his own authority, as a puniſhment: ordinary is where a juſtice commits a perſon rather for ſafe cuſtody than for puniſhment; the perſon thus committed by ordinary commandment is bailable. In another ſenſe of the word, magiſtrates may command others to aſſiſt them in the execution of their offices, in order to keep the king's peace, &c.

COMMANDMENT, is uſed for the offence of a perſon that wills or orders another to do ſome unlawful act, as theft, murder, or the like. To command any one to commit burglary, is felony excluded clergy; and he who commands the doing any act that is unlawful, is acceſſary to it and all the conſequences thereof, if executed in the ſame manner as commanded; though not where it varies, or where the commander revokes the command. In treſpaſſes, &c. a maſter ſhall be charged with the acts of his ſervant done by his command: however, ſervants ſhall not be excuſed for committing any crime when they act by command of their maſters, who have no ſuch power over them as to enforce ſuch commandments. The commands of infants or feme coverts are void. The ten commandments given to Moſes was 1494 years before Chriſt.

COMMENDAM, in the eccleſiaſtical law, the truſt or adminiſtration of the revenues of a benefice, given either to a layman, to hold, by way of depoſitum, for ſix months, in order to repairs, &c. or to an eccleſiaſtic, or beneficed perſon, to perform the paſtoral duties till the benefice is provided with a regular incumbent.

COMMENSURABLE, among geometricians, an appellation given to ſuch quantities as are meaſured by one and the ſame common meaſure: thus if the line A|—|—|—|—|—|—|—|—| *a* be equal to eight, and the line B|—|—|—|— *b* equal to 4 inches, theſe two lines will be commenſurable, ſince the ſame common meaſure 2 meaſures them both.

COMMENSURABLE NUMBERS, whether integers or fractions, are ſuch as can be meaſured or divided by ſome other number, without any remainder: ſuch are 12 and 18, as being meaſured by 6 or 3.

COMMENSURABLE *in Power*, is ſaid of right lines when their ſquares are meaſured by one and the ſame ſpace or ſuperfices.

COMMENTARY, or COMMENT, in matters of literature, an illuſtration of the difficult or obſcure paſſages of an author.

COMMENTARY, or COMMENTARIES, a kind of hiſtory or memoirs of certain tranſactions, wherein the author had a conſiderable hand: ſuch are the Commentaries of Cæſar.

COMMERCE, a term uſed for buying, ſelling, or bartering of all manner of goods or commodities, in order to profit by the ſame.

COMMINUTION, the breaking or rather grinding a body into very ſmall particles.

COMMISSARY, in the eccleſiaſtical law, an officer of the biſhop, who exerciſes ſpiritual juriſdiction in places of a dioceſe ſo far from the epiſcopal ſee, that the chancellor cannot conveniently call the people to the biſhop's principal conſiſtory court.

COMMISSARY, in a military ſenſe, is of three ſorts.

COMMISSARY *General of the Muſters*, an officer appointed to muſter the army when the general thinks proper, in order to know the ſtrength of each regiment and company, to receive and inſpect the muſter-rolls, and to keep an exact ſtate of the ſtrength of the army.

COMMISSARY *General of the Stores*, an officer in the artillery, who has the charge of all the ſtores, for which he is accountable to the office of ordnance.

COMMISSARY *General of Proviſions*, an officer who has the inſpection of the bread and proviſions of the army.

COMMISSION, in common law, the warrant or letters-patent which all perſons, exerciſing juriſdiction, have to empower them to hear or determine any cauſe or ſuit; as the commiſſion of the judges, &c.

COMMISSIONER *of the Navy*. See NAVY.

COMMISSIONER, one authorized by commiſſion, letters-patent, or other lawful warrant, to examine any matters, or execute any public office, &c.

COMMITMENT, in law, the ſending of a perſon, charged with ſome crime, to priſon, by warrant, or order.

COMMITTEE, one or more perſons to whom the conſideration of a matter is referred, either by ſome court, or by the conſent of parties, to whom it belongs.

COMMITTEE *of Parliament*, a certain number of members appointed by the houſe for the examination of a bill, making report of an inquiry, proceſs of the houſe, &c.

COMMODITY, in a general ſenſe, all ſorts of wares, goods, and merchandiſes whatſoever, that a perſon deals or trades in.

Staple COMMODITIES, ſuch wares and merchandiſes as are commonly and readily ſold in a market, or exported abroad; being, for the moſt part, the proper produce or manufacture of the country.

COMMODORE, in the royal navy, an officer who commands a fleet or ſquadron of ſhips of war, and is diſtinguiſhed by wearing a broad penant, i. e. a ſmall red flag which tapers to a point: the office of commodore is only inveſted in a captain in the navy for a certain time, during which he has the rank of brigadier-general, of which at the expiration of ſuch office, he is deprived.

COMMON, ſomething that belongs to all alike, in contradiſtinction to proper, peculiar, &c. Thus the earth is ſaid to be our common parent.

COMMON LAW, that body of rules received as law in England, before any ſtatute was enacted to alter the ſame.

COMMON-PLACE BOOK, *Adverſaria*, a regiſter of what things occur worthy to be noted in the courſe of a man's ſtudy, ſo diſpoſed, as that among a number of ſubjects, any one may be eaſily found. Several perſons have their ſeveral methods of ordering them; but that which is beſt recommended, is Mr. Locke's method, which he has publiſhed in a letter to Mr. Toiſnard, determined thereto by the great conveniency and advantage he had found from it in twenty years experience.

COMMON-PLEAS is one of the king's courts now held conſtantly in Weſtminſter-Hall, but anciently was moveable. This court was eſtabliſhed in 1215.

COMMON, in law, that ſoil, the uſe of which is common to this or that town or lordſhip.

COMMON-PRAYER, the liturgy in the church of England. It was publiſhed in Engliſh, with the authority of parliament, in 1548.

COMMON, in grammar, denotes the gender of nouns which are equally applicable to both ſexes: thus *parens*, a parent, is of the common gender.

COMMON, in geometry, is applied to an angle, line, or the like, which belongs equally to two figures.

COMMONS, or *Houſe of* COMMONS, the lower houſe of parliament. See PARLIAMENT.

COMMONS, or COMMONALITY, likewiſe ſignifies the whole body of the people under the degree of a baron, whether knights, gentlemen, burgeſſes, yeomen, &c.

COMMONWEALTH, the ſame with republic. See REPUBLIC.

COMMOTIOM, an inteſtine motion in the parts of any thing.

COMMUNICATION, in a general ſenſe, the act of imparting ſomething to another.

COMMUNICATION, the connection of one thing with another, or the paſſage from one place to another: thus a gallery is a communication between two apartments.

COMMUNICATION *of Motion*, in philoſophy, the action of a moving body, whereby a body at reſt is put in motion, or a body already in motion is accelerated.

The Laws of Communication of Motion. Sir Iſaac Newton demonſtrates, that action and re-action are equal and oppoſite; ſo that one body ſtriking againſt another, and thereby occaſioning a change in its motion, does in itſelf undergo the ſame change in its own motion, the contrary way.

Hence a moving body ſtriking directly againſt another at reſt, the one loſes juſt as much of its motion as it communicates to the other; and they will proceed with the ſame velocity as if grown into one maſs.

Therefore, if the body in motion be triple that at reſt, againſt which it ſtrikes, it will looſe a fourth part of its motion; and whereas, before it would run over a line of 20 feet, in a given time, it will now only run over 15; that is, it will loſe a fourth part of its velocity.

If a moving body ſtrike another already in motion, the firſt will augment the velocity of the latter, but will loſe leſs of its motion than if the latter had been abſolutely at reſt.

Thus if a body in motion be triple of another at reſt, and ſtrike againſt it with 32 degrees of motion, it will communicate 8 degrees of its motion to the other, and retain 24 to itſelf. If the other had already 4 degrees of motion, the firſt would only communicate 5, and retain 27; ſince thoſe five were ſufficient, in regard to the inequality of the bodies, to make them proceed with equal velocity. After the ſame manner may be determined the other laws of communication in bodies perfectly hard, and void of all elaſticity. But all hard bodies, that we know of, have an elaſtic power, and the laws are different and much more intricate in elaſtic bodies.

If a body happen to decline out of the way, when moved by another, ſo as to leave a free paſſage to the body by which it was moved; yet that will only proceed with the velocity which it had after its communication with the other, not with that it had before. It being a rule that every thing endeavours to perſevere, not in the ſtate wherein it was formerly, but in that wherein it was at that juncture: therefore, a body that has already loſt part of its motion by its meeting with another, may ſtill looſe more by a ſecond and a third, ſo as at length to become perfectly at reſt.

Hence, firſt, if two unequal homogeneous bodies move in a right line with the ſame velocity, the greater muſt preſerve its motion longer than the ſmaller; for the motions of bodies are as their maſſes, but each communicates of its motion to the circumjacent bodies which touch the ſurface; the largeſt body therefore, though it has more ſurface than the ſmaller, yet, having leſs in proportion to its maſs or quantity of matter than the ſmaller, will loſe a leſs portion of its velocity every moment than the ſmaller.

Hence, ſecondly, we ſee the reaſon, why any long body, as a dart thrown longwiſe, continues its motion longer than when thrown tranſverſely, it meeting fewer bodies in the way to communicate its motion to in the one caſe than in the other.

Hence alſo, thirdly, if a body be moved almoſt wholly within itſelf, ſo as to communicate little of its motion to the ambient bodies, it muſt continue its motion a long time: thus, a ſmooth braſs ball of half a foot diameter, placed on a ſlender ſmooth axis, with a very weak impulſe is found to revolve for the ſpace of 3 or 4 hours.

Lines of COMMUNICATION, in military matters, trenches made to continue and preſerve a ſafe correſpondence between two forts or poſts; or at a ſiege, between two approaches, that they may relieve one another.

COMMUNION, in matters of religion, the being united in doctrine and diſcipline; in which ſenſe of the word, different churches are ſaid to hold communion with each other.

COMMUNION is alſo uſed for the act of communicating in the ſacrament of the Lord's-ſupper.

COMMUNION-SERVICE, in the liturgy of the church of England, the office for the adminiſtration of the holy ſacrament.

COMMUNION-TABLE, that whereon the elements of bread and wine, uſed in partaking of the Holy Sacrament, are placed.

COMMUNITY, a ſociety of men living in the ſame place, under the ſame laws, the ſame regulations, and the ſame cuſtoms.

COMMUTATION, in law, the change of a penalty or puniſhment from a greater to a leſs; as when death is commuted for baniſhment, &c.

COMPACT, in phyſiology, is ſaid of bodies which are of a cloſe, denſe, and heavy texture, with few pores, and thoſe very ſmall.

COMPANY, in general, denotes a number of people met together in the ſame place, and about the ſame deſign. With reſpect, however, to matters of pleaſure or diverſion, inſtead of company, we generally make uſe of the term party.

COMPANY, in a commercial ſenſe, a ſociety of merchants, mechanics, or other traders, joined together in one common intereſt.

COMPANY, in military affairs, a ſmall body of foot, commanded by a captain, who has under him a lieutenant and enſign. The number of centinels, or private ſoldiers in a company may be from 50 to 80; and a battalion conſiſts of thirteen ſuch companies, one of which is always grenadiers, and poſted on the right: next them ſtand the eldeſt company, and on the left the ſecond company; the youngeſt company being always poſted in the center. Companies not incorporated into regiments are called irregulars, or independent companies.

COMPARATIVE, ſomething that is compared to another.

COMPARATIVE ANATOMY, that branch of anatomy which conſiders the ſecondary objects, or the bodies of other animals; ſerving for the more accurate diſtinctions of ſeveral parts, and ſupplying the defects of human ſubjects.

COMPARATIVE DEGREE, among grammarians, that between the poſitive and ſuperlative degrees, expreſſing any particular quality above or beneath the level of another.

COMPARISON, the conſideration of the relation between two perſons or things, when appoſed and ſet againſt each other, by which we judge of their agreement or difference, and find out wherein the one has the advantage of the other.

COMPARISON *of Ideas*, among logicians, that operation of the mind whereby it compares its ideas one with another, in regard of extent, degree, time, place, or any other circumſtance, and is the ground of relations. This is a faculty which the brutes ſeem not to have in any great degree. See IDEA and RELATION.

COMPARISON, in grammar, the inflection of the comparative degree. See COMPARATIVE.

COMPARISON, in rhetoric, a figure that illuſtrates and ſets off one thing, by reſembling and comparing it with another, to which it bears a manifeſt relation and reſemblance, as the following figure in Dr. Young's Revenge.

"The maid that loves
"Goes out to ſea upon a ſhatter'd plank,
"And puts her truſt in miracles for ſafety".

COMPARTITION, in architecture, the uſeful and the graceful diſpoſition of the whole ground-plot of an edifice, into rooms of office, of reception or entertainment.

COMPARTMENT, or COMPARTIMENT, in general, a deſign compoſed of ſeveral different figures, diſpoſed with ſymmetry, to adorn a parterre, a cieling, &c.

A compartment of tiles, or bricks, is an arrangement of them, of different colours, and varniſhed for the decoration of a building. Compartments, in gardening, are an aſſemblage of beds, plats, borders, walks, &c. diſpoſed in the moſt advantageous manner that the ground will admit of. Compartments, in heraldry, are otherwiſe called partitions. See PARTITION.

COMPASS, or *Mariners* COMPASS, an inſtrument whereby the ſhip's courſe is determined. This inſtrument, which is a repreſentation of the horizon, is a circle didived into 32 equal parts, by right lines drawn from the center to the circumference, called points, or rumbs, being alſo divided into 360 equal parts, or degrees; and conſequently the diſtance between, or angle formed by, any two rumbs, is equal to 11°, 15'. The four principal of theſe rumbs are called the cardinal points, and take their names from the places to which they tend, viz. that which extends itſelf under the meridian, pointing towards the north, is called north; and its oppoſite one, pointing towards the ſouth, is called ſouth; that which is towards the right-hand, the face being directed north, is termed eaſt; and its oppoſite, weſt. The names of the others are compounded of thoſe, according to their ſituation. So careleſs are the generality of commanders of this moſt uſeful inſtrument, that almoſt all the compaſſes uſed on board merchant-ſhips have their needles formed of two pieces of ſteel wire, each of which is bent in the middle, ſo as to form an obtuſe angle; and their ends, being applied together, make an acute one; ſo that the whole repreſents the form of a lozenge; in the center of which, and of the card, is placed the braſs cap. Now, if we examine a number of theſe cards, we ſhall rarely, if ever, find them all in the ſame direction, but they will all vary more or leſs, not only with regard to the true direction, but from one another.

The inconveniences attending the common ſtructure of the needle, induced the ingenious Dr. Knight to contrive a new ſea-compaſs, which is now uſed on board all the ſhips of war. The needle in this inſtrument is quite ſtraight, and ſquare at the ends; and conſequently has only two poles, though about the hole in the middle, the curves are little confuſed. Needles of this conſtruction, after vibrating a long time, will always point exactly in the ſame direction; and if drawn ever ſo little on one ſide, will return to it again, without any ſenſible difference. We may therefore conclude, that a regular parallelopiped is the beſt form for a needle, as well as the ſimpleſt, the holes for the caps being as ſmall as poſſible.

And as the weight ſhould be removed to the greateſt diſtance from the center of motion, a circle of braſs, of the ſame diameter of the card, may be added, which will ſerve alſo to ſupport the card, which may then be made of thin paper, without any thing to ſtiffen it. This ring being fixed below the card, and the needle above it, the center of gravity is placed low enough to admit of the cap being put under the needle, whereby the hole in the needle becomes unneceſſary.

COMPASS DIALS, ſmall horizontal dials, fitted in braſs or ſilver boxes, for the pocket, to ſhew the hour of the day, by the direction of a needle, that indicates how to place them right, by turning the dial about till the cock or ſtyle ſtand directly over the needle, and point to the northward: but theſe can never be very exact, becauſe of the variations of the needle itſelf.

COMPASS-SAW. See SAW.

COMPASSES, or *Pair of* COMPASSES, a mathematical inſtrument for deſcribing circles, meaſuring figures, &c.

The principal perfection of this, as of all other compaſſes, conſiſts in the eaſy and uniform opening and ſhutting of their legs; one of which may be taken out in order to make room for others.

There are now uſed compaſſes of various kinds and contrivances, accommodated to the various uſes they are intended for; as,

COMPASSES *of three Legs* are, ſetting aſide the addition of a leg, of the ſame ſtructure with the common ones: their uſe being to take three points at once, and ſo to form triangles; to lay down three poſitions of a map, to be copied at once, &c.

Beam COMPASSES conſiſt of a long branch, or beam, carrying two braſs curſors, the one fixed at one end, the other ſliding along the beam, with a ſcrew to faſten it on occaſion.

To the curſors may be ſcrewed points of any kind, whether ſteel, for pencils, or the like. It is uſed to draw large circles, to take great extents, &c.

Calibar COMPASSES. See CALIBAR.

Clockmaker's COMPASSES are joined like the common compaſſes, with a quadrant, or bow, like the ſpring compaſſes; only of different uſe, ſerving here to keep the inſtrument firm at any opening. They are are made very ſtrong, with the points of their legs of well tempered ſteel, as being uſed to draw lines on paſte-board or copper.

Cylindrical and Spherical COMPASSES, conſiſt of four branches, joined in a center, two of which are circular, and two flat, a little bent on the ends: their uſe is to take the diameter, thickneſs, or calibar of round or cylindric bodies; ſuch as cannons, pipes, &c. See CALIBAR *Compaſſes*.

German COMPASSES have their legs a little bent outwards, towards the top; ſo that when ſhut, the points only meet.

Lapidary's COMPASSES, a piece of wood, in form of the ſhaft of a plane, cleft at top, as far as half its length;

with this they meaſure the angles, &c. of jewels and precious ſtones, as they cut them.

Proportional COMPASSES, ſuch as have two legs, but four points, which, when opened, are like a croſs, as not having the joint at the end of the legs like common compaſſes: ſome of theſe have fixed joints, others moveable ones; upon the legs of the latter of which are drawn the lines of chords, ſines, tangents, &c.

Their uſe is to divide lines and circles into equal parts; or to perform the operations of the ſector at one opening of them.

Spring COMPASSES, or DIVIDERS, thoſe with an arched head, which by its ſpring opens the legs; the opening being directd by a circular ſcrew, faſtened to one leg, and let through the other, worked with a nut. Theſe compaſſes are made of hardened ſteel.

Triſecting COMPASSES. They conſiſt of two central rules, and an arch of a circle of 120 degrees, immoveable. with its radius, which is faſtened with one of the central rules, like the two legs of a ſector, that the central rule may be carried through all the points of the circumference of the arch. The radius and rule ſhould be as thin as poſſible; and the rule faſtened to the radius, ſhould be hammered cold, to attain the greater elaſticity; and the breadth of the central rule ſhould be tripple that of the radius: there muſt be alſo a groove in this rule, with a dove tail, faſtened on it for its motion, and a hole in the centre of each rule. The uſe of this inſtrument is to facilitate the triſection of angles geometrically: and it is ſaid to have been invented by M. Tarragen for that purpoſe.

Turn up COMPASSES. The body of this inſtrument is like the common compaſſes; but towards the bottom of the legs, without ſide, are added two other points, beſides the uſual ones: the one whereof carry a drawing pen-point, the other a port-crayon, both adjuſted ſo as to turn round, and ſo to be in the way of uſe, or out of it, as occaſion requires. Theſe compaſſes have been contrived in order to ſave the trouble of changing the points.

COMPENDIUM, in literary matters, much the ſame with epitome, or abridgement. See ABRIDGEMENT.

COMPENSATION, an action whereby any thing is admitted as an equivalent to another.

COMPENSATION, in the civil law, a ſort of right, whereby a debtor, ſued by his creditor for the payment of a debt, demands that the debt may be compenſated with what is owing him by the creditor, which in that caſe is equivalent to payment.

COMPLEMENT, in aſtronomy, the diſtance of a ſtar from the zenith; or the arch comprehended between the place of the ſtar above the horizon and the zenith.

COMPLEMENT, in geometry, is what remains of a quadrant of a circle, or of 90°, after any certain arch has been taken away from it. The ſine of the complement of an arch is called the coſine, and that of the tangent, the cotangent, &c.

COMPLEMENT *of the Courſe*, in navigation, the number of points the courſe wants of 90°, or eight points, viz. of a quarter of the compaſs. See COURSE.

COMPLEX *Ideas*, in logic, ſuch as are compounded of ſeveral ſimple ones. See TERM and IDEA.

COMPLEX *Propoſition*, that which has at leaſt one of its terms complex, or ſuch as contains ſeveral members, as caſual propoſitions: or it is ſeveral ideas offering themſelves to our thoughts at once, whereby we are led to affirm the ſame thing of different objects, or different things of the ſame object.

COMPLEX *Term*, in logic, that which requires more than one word to ſignify one thing; or when one word implies ſeveral things.

Some terms are complex in words, but not in ſenſe.

Some terms are complex in ſenſe, but not in words; ſo when we ſay an army, a foreſt, we mean a multitude of men, of trees; and almoſt all our moral ideas, as well as many of our natural ones, are expreſſed in this manner; religion, piety, loyalty, knavery, theft, include a variety of ideas in each term.

There are other terms which are complex both in words and ſenſe; ſo when we ſay, a fierce dog; or a pious man, it excites an idea, not only of thoſe two creatures, but of their peculiar characters alſo.

Among the terms that are complex in ſenſe, but not in words, we may reckon thoſe ſimple terms which contain a primary and ſecondary idea in them; as when we hear our neighbour ſpeak that which is not true, we ſay to him, this is not true, or this is falſe, we only convey to him the naked idea of his error; this is the primary idea: but if we ſay it is a lye, the word lye carries alſo a ſecondary idea in it, for it implies both the falſhood of the ſpeech, and our reproach and cenſure of the ſpeaker.

COMPLEXION, *Complexio*, among phyſicians, the temperament, habitude, and natural diſpoſition of the body, but it uſually means the colour of the face and ſkin.

COMPLEXUS, in anatomy, a broad and pretty long muſcle, lying along the back-part and ſide of the neck. See MUSCLES.

COMPLEXUS MINOR, in anatomy, a narrow, long, and ſlender muſcle, lying along the inſide of the neck. See MUSCLE.

COMPLICATION, the blending, or rather interweaving, of ſeveral different things together: thus a perſon afflicted with ſeveral diſorders at the ſame time, is ſaid to have a complication of diſeaſes.

COMPONED, COMPONE, or GOBONY, in heraldry, is ſaid of a bordure made up of angular parts, or chequers, of different colours.

COMPOSITE, in general, denotes ſomething compounded, or made up of ſeveral others united together.

COMPOSITE ORDER, in architecture, the laſt of the five orders of columns; ſo called becauſe its capital is compoſed out of thoſe of the other columns, borrowing a quarter-round from the Tuſcan and Doric, a row of leaves from the Corinthian, and volutes from the Ionic. Its corniche has ſimple modilions or dentils. It is alſo called the Roman or Italic order, as having been invented by the Romans. By moſt authors it is ranked after the Corinthian, either as being the next richeſt, or the laſt invented.

For the parts of this order, ſee BASE, CAPITAL, COLUMN, ENTABLATURE, FRIEZE, PEDESTAL, &c.

COMPOSITION, *Compoſitio*, the uniting and putting together ſeveral things, ſo as to form one whole, called a compound.

COMPOSITION *of Ideas*, an act of the mind, whereby it unites ſeveral ſimple ideas into one conception, or complex idea.

COMPOSITION, in grammar, the joining of two words together; or prefixing a particle to another word, to augment, diminiſh, or change its ſignification. See WORD.

COMPOSITION, in logic, a method of reaſoning, whereby we proceed from ſome general ſelf-evident truth, to other particular and ſingular ones.

COMPOSITION, in muſic, the art of diſpoſing muſical ſounds into airs, ſongs, &c. in one or more parts, to be ſung by a voice, or played on inſtruments. See MUSIC and SONG.

COMPOSITION, in oratory, the coherence and order of the parts of a diſcourſe. To compoſition belong both the artful joining of the words, whereof the ſtyle is formed, and whereby it is rendered ſoft and ſmooth, gentle and flowing, full and ſonorious; or the contrary; and the order, which requires things firſt in nature and dignity, to be put before thoſe of inferior conſideration.

COMPOSITION, in painting, conſiſts of two parts, invention and diſpoſition; the firſt is the choice of the objects which are to enter into compoſition of the ſubject the painter intends to execute, and is either ſimply hiſtorical or allegorical. The other very much contributes to the perfection and value of a piece of painting.

COMPOSITION, in pharmacy, the method of mixing and compounding medicines of different qualities, ſo that they may aſſiſt each other's virtues, or ſupply each other's defects.

COMPOSITION, in commerce, a contract between an inſolvent debtor and his creditors, whereby the latter accept of a part of the debt in compenſation for the whole, and give a general acquittance.

COMPOSITION, in printing, commonly termed compoſing, the arranging of ſeveral types, or letters, in the compoſing ſtick, in order to form a line; and of ſeveral lines ranged in order, in the galley, to make a page; and of ſeveral pages to make a form.

COMPOSITION *of Motion*, or FORCES, an aſſemblage of ſeveral directions of motion reſulting from ſeveral powers acting in different, though not oppoſite directions.

The doctrine of compoſition and reſolution of motion is founded on Sir Iſaac Newton's Second Law of Nature, viz. "The change of motion is always proportionable to the moving force impreſſed, and is always made according to the right line in which that force is impreſſed."

COMPOSITION *of Proportion*. See PROPORTION.

COMPOST, in huſbandry and gardening, ſeveral ſorts of ſoils, or earthy matter, mixed together, to make a manure for aſſiſting the natural earth in the work of vegetation, by way of amendment or improvement. Compoſts are various, and ought to be different, according to the different nature of the ſoils which they are deſigned to meliorate, and according as the land is either light, ſandy, looſe, heavy, clayey, or cloddy. A light, looſe land requires a compoſt of a heavy nature, as the ſcouring of deep ditches, ponds, &c. ſo, on the other hand, land that is heavy, clayey, or cloddy, requires a compoſt of a more ſprightly and fiery nature, that will inſinuate itſelf into the lumpiſh clods, which, if they are not thus managed, would very much obſtruct the work of vegetation. See CLAY, &c.

COMPOSTO, in muſic, means compounded or doubled, as a fifteenth is an octave doubled, or an octave is compounded of a fifth and a fourth.

COMPOUND, in a general ſenſe, an appellation given to whatever is compoſed or made up of different things: thus we ſay, a compound word, compound ſound, compound taſte, compound force, compound ſpirit, &c. See WORD, SOUND, &c.

COMPOUND FLOWER, one conſiſting of ſeveral diſtinct leſſer flowers, or corollulæ, each furniſhed with a ſtyle, ſtamina, &c. See FLOWER.

COMPOUND-INTEREST. See INTEREST.

COMPOUND-MOTION, that effected by the concurring action of ſeveral different powers. See COMPOSITION *of Motion*.

COMPOUND-NUMBERS, thoſe which may be divided by ſome other number beſides unity, without having any remainder: ſuch are 18, 20, &c. the firſt being meaſured by the numbers 2, 6, or 9; and the ſecond, by the numbers 2, 4, 5, 10.

COMPOUND PENDULUM, QUANTITIES, RATIO, &c. See PENDULUM, QUANTITY, RATIO, &c.

COMPOUNDER, in general, denotes one who compounds ſeveral things together.

COMPREHENSION, or SYNECDOCHE, a trope or figure in rhetoric, which puts the name of the whole for a part, or of a part for the whole.

COMPRESS, in ſurgery, a bolſter of ſoft linen cloth, folded in ſeveral doubles; frequently applied to cover a plaſter, in order not only to preſerve the part from the external air, but alſo the better to retain the dreſſings or medicines.

COMPRESSED LEAF, among botaniſts, one with a mark or impreſſion on both ſides. See LEAF.

COMPROMISE, a treaty, or contract, whereby two contending parties eſtabliſh arbitrators, to terminate their difference amicably.

COMPTROLLER, See CONTROLLER.

COMPUNCTION, in theology, an inward grief of mind for having offended God.

COMPURGATOR, in law, one that by oath juſtifies or clears another's innocence.

COMPUTATION, in a general ſenſe, the manner of eſtimating time, weights, meaſure, monies, or quantities of any kind.

COMPUTO, in law, a writ to compel a bailiff, receiver, or accountant, &c. to deliver up his accounts.

CONARION, or CONOIDES, a name for the pineal gland, a ſmall gland about the bigneſs of a pea, placed in the upper part of that hole in the third ventricle of the brain, called the anus, and tied by ſome fibres to the nates. See BRAIN.

CONCAVE, an appellation uſed in ſpeaking of the inner ſurface of hollow bodies, but more eſpecially of ſpherical ones.

CONCAVE-GLASSES, ſuch as are ground hollow, and are uſually of a ſuperficial figure, tho' they may be of any other, as parabolical, &c. All objects ſeen through concave glaſſes, appear erect and diminiſhed. The confuſed appearance of a point, through any concave glaſs, proceeds from the too great divergency of thoſe rays which fall on the eye: wherefore, ſince the more remote the eye is from the glaſs, the leſs will the rays diverge; then the further the eye is from the concave glaſs, the more diſtinct will be the appearance of any object through it, though the more faint.

The apparent place of objects ſeen through concaves is always brought nearer to the eye, which is the reaſon they help ſhort-ſighted perſons, or ſuch as can ſee diſtinctly only thoſe objects that are very near them. See FOCUS, LENS, and MIRROR.

CONCENTRATION, the bringing things nearer a center. Hence the particles of ſalt, in ſea water, are ſaid to be concentrated; that is, brought nearer each other, by evaporating the watery part: thus, alſo, wine is ſaid to be concentrated, when its watery parts are ſeparated in the form of ice by froſt.

CONCENTRIC, in mathematics, ſomething that has the ſame common center with another: it ſtands in oppoſition to excentric.

CONCEPTION, among phyſicians, &c. the firſt formation of an embryo in the womb. See GENERATION and PREGNANCY.

Immaculate CONCEPTION, a feſtival in the Romiſh church, obſerved on the 8th of December, in commemoration of the holy virgin's having been conceived and born immaculate, or without original ſin. The immaculate conception of the Virgin, though reckoned a pious opinion, is no article of faith in the Romiſh church.

CONCEPTION *of our Lady*, a religious order in Portugal, founded in the XVth century. This order has ſince paſſed into Italy, and got footing in Rome and Milan.

CONCEPTION, in logic. See APPREHENSION.

CONCERT, or CONCERTO, in muſic, a number or company of muſicians, playing or ſinging the ſame piece of muſic or ſong at the ſame time. A concerto for any inſtrument, as organ, harpſichord, violin, &c. is a piece of muſic, wherein either of thoſe inſtruments has the greateſt part; or in which the performance is partly alone, and partly accompanied by the other parts.

CONCERTANTE, thoſe parts of a piece of muſic that ſing or play throughout the whole piece, either alone, or accompanied, to diſtinguiſh thoſe parts that only play in particular places.

CONCERTATO intimates the piece of muſic to be compoſed in ſuch a manner, as that all the parts may have their recitatives, be it for two, three, four, or more voices or inſtruments.

CONCERTO GROSSI, the grand chorus of a concert.

CONCESSI, in law, a term frequently uſed in conveyances. Its effect is to create a covenant, as *dedi* does a warranty.

CONCESSION, in rhetoric, a figure, whereby ſomething is freely allowed, that yet might bear diſpute, to obtain ſomething that one would have granted to him, and which he thinks cannot fairly be denied.

CONCHA, a genus of bivalve ſhells, the animal inhabiting which is called tethys. See TETHYS.

CONCHA, in anatomy, the larger cavity of the external ear, ſituated before the meatus auditorius, or paſſage into the internal ear.

CONCHOID, or CONCHILIS, in geometry, a curve line, which always approaches nearer a ſtraight line to which it is inclined, but never meets it.

CONCHYLLA, a general name for all kinds of petrified ſhells, as limpets, cochlea, nautili, conchæ, lepades, &c.

CONCINNOUS SYSTEM, in muſic. A ſyſtem is ſaid to be concinnous, when its parts, conſidered as ſimple intervals, are concinnous; and are beſides placed in ſuch an order between the extremities, as that the ſucceſſion of ſounds, from one extreme to the other, may have an agreeable effect.

CONCLAVE, the place in which the cardinals of the Romiſh church meet, and are ſhut up, in order to elect a pope. The conclave is a range of ſmall cells, ten feet ſquare, made of wainſcot: theſe are numbered, and drawn for by lot. They ſtand in a line along the galleries and hall of the Vatican, with a ſmall ſpace between each. Every cell has the arms of the cardinal over it. The conclave is not fixed to any one determinate place, for the conſtitutions of the church allow the cardinals to make choice of ſuch a place for the conclave as they think moſt convenient; yet it is generally held in the Vatican. The conclave is ſtrictly guarded by troops: neither the cardinals, nor any perſon ſhut up in the conclave, are ſpoke to, but at the hours allowed of, and then in Italian or Latin; even the proviſions for the conclave are examined, that no letters be conveyed by that means from the miniſters of foreign powers, or other perſons who may have an intereſt in the election of the pontiff.

CONCLAVE is alſo uſed for the aſſembly or meeting of the cardinals ſhut up for the election of a pope.

CONCLUSION, in logic, the conſequence or judgment drawn from what was aſſerted in the premiſes. See SYLLOGISM.

CONCOCTION, in medicine, the change which the food undergoes in the ſtomach, &c. to become chyle. See CHYLE, CHYLIFICATION, and DIGESTION.

CONCOMITANT, in theology, ſomething that accompanies or goes along with another.

CONCORD, in grammar, that part of conſtruction called ſyntax, in which the words of a ſentence agree; that is, in which nouns are put in the ſame gender, number, and caſe; and verbs in the ſame number and perſon with nouns and pronouns.

CONCORD, in muſic, the relation of two ſounds that are always pleaſing to the ear, whether applied in conſonance or in ſucceſſion.

If two ſimple ſounds have ſuch a relation, or difference of tune, as that, when mixed together, they form a compound ſound, which agreeably affects the ear, that relation is denominated concord; and whatever two ſounds agree in conſonance, the ſame will follow each other agreeably, or be pleaſing in ſucceſſion. The reverſe of a concord is a diſcord, being all the relations or differences of tune that are grating to the ear.

Concord and harmony are, in fact, the ſame thing, though by cuſtom they are applied differently, harmony expreſſing the agreement of a greater number of ſounds than two in conſonance; beſides, harmony always implies conſonance; but concord is ſometimes applied to ſucceſſion, though never but when it will make a pleaſing conſonance. The differences of tune take their riſe from the different proportions of the vibrations of a ſonorous body, that is, of the velocity of thoſe vibrations in their recourſes; the more frequent thoſe recourſes are, the more acute is the tune, *& vice verſa.* But the eſſential difference between concord and diſcord lies more remote: there does not appear any natural aptitude in two ſounds of a concord to give a pleaſing ſenſation, more than in two of a diſcord; theſe different effects muſt be reſolved into the divine will.

In ſhort the whole that is certainly known with reſpect to concord may be ſummed up in this definition; concord is the reſult of a frequent union, or coincidence of the vibrations of two ſonorous bodies, and conſequently of the undulating motions of the air, which, ariſing from theſe vibrations, are ſimilar and proportionable to them; which coincidence, the more frequent it is, with regard to the number of vibrations of both bodies, performed in the ſame time, cæteris paribus, the more perfect is that concord: till the unfrequency of the coincidence, in reſpect of one or both the motions, commence diſcord.

CONCORDANCE, a kind of dictionary of the bible, explaining the words thereof in alphabetical order, with the ſeveral books, chapters, and verſes quoted, in which they are contained.

CONCRETE, in natural philoſophy and chemiſtry, ſignifies a body made up of different principles, or any mixed body: thus a ſope is a factitious concrete, or a body mixed together by art; and antimony is a natural concrete, or a mixed body, compounded in the bowels of the earth.

CONCRETE, in logic, is uſed in contradiſtinction to abſtract; for example, when we conſider any quality, as whiteneſs, inherent in any ſubject, as, ſuppoſe, in ſnow: if we ſay the ſnow is white, then we ſpeak of whiteneſs in the concrete: but if we conſider whiteneſs by itſelf, as a quality that may be in paper, in ivory, and in other things, as well as in ſnow, we are then ſaid to conſider, or to take it in the abſtract. See ABSTRACT.

CONCRETE NUMBERS, thoſe numbers which are applied to expreſs or denote any particular ſubject, as two men, three pounds, two thirds of a ſhilling, &c. whereas if nothing be concreted with the number, it is taken abſtractly, or univerſally. Thus three ſignifies an aggregate of three units; let theſe units be men, pounds, or whatever elſe you pleaſe.

CONCRETION, the uniting ſeveral ſmall particles of a natural body into ſenſible maſſes, or concretes, whereby it becomes ſo and ſo figured and determined, and is indued with ſuch and ſuch properties. See CONCRETE.

CONCUPISCENCE, according to divines, luſt after carnal things, inherent in the nature of man ever ſince the fall.

CONDEMNATION, the act of giving judgment, or pronouncing ſentence againſt a perſon ſubjected thereby to ſome penalty or puniſhment. See SENTENCE and PUNISHMENT.

CONDENSATION, the act whereby a body is rendered more denſe, compact, and heavy. Condenſation is, by moſt writers, diſtinguiſhed from compreſſion, in regard the latter is performed by ſome external violence; whereas the former is the action of cold.

CONDENSER, a pneumatic engine, or ſyringe, whereby an uncommon quantity of air may be crowded into a given ſpace; ſo that ſometimes ten atmoſpheres, or ten times as much air as there is at the ſame time, in the ſame ſpace, without the engine, may be thrown in by means of it, and its egreſs prevented by valves properly diſpoſed. See plate XII. *fig.* 7.

It conſiſts of a braſs cylinder, wherein is a moveable piſtion; which being drawn out, the air ruſhes into the cylinder through a hole provided on purpoſe; and when the piſtion is again forced into the cylinder, the air is driven into the receiver through an orifice, furniſhed with a valve to hinder its getting out.

CONDITION, in the civil law, a clauſe of obligation ſtipulated as an article of a treaty or contract; or in a donation of teſtament, legacy, &c. in which laſt caſe a donee does not loſe his donative, if it be charged with any diſhoneſt or impoſſible conditions.

CONDITION, in common law, a reſtriction annexed to an act, qualifying or ſuſpending the ſame, in rendering its effect precarious and uncertain.

CONDITIONAL, not abſolute, but ſubject to conditions.

Conditional legacies are not due till the conditions are accompliſhed.

CONDITIONAL CONJUNCTIONS, in grammar, thoſe which ſerve to make propoſitions conditional. As, *if*, *unleſs*, *provided*, *&c.*

CONDITIONAL PROPOSITIONS, in logic, ſuch as conſiſt of two parts connected together by a conditional particle.

CONDUCT, or *Safe* CONDUCT, a ſecurity, granted to an enemy, under the great ſeal of a prince that he may paſs without being moleſted.

CONDUCTOR, in ſurgery, an inſtrument which ſerves to conduct the knife in the operation of cutting for the ſtone, and in laying up ſinuſes and fiſtulas. It is alſo called a gorget. See STONE.

CONDUCTORS, in military affairs, aſſiſtants given to the commiſſary of the ſtores to receive or deliver out ſtores to the army, to attend at the magazines by turns when in garriſon, and to look after the ammunition-waggons in the field.

CONDUIT, a canal or pipe, for the conveyance of water, or other fluid.

CONDYLOMA, in medicine, a tubercle or callous eminence which ariſes in the folds of the anus; or rather a ſwelling or hardening of the wrinkles of that part.

CONDYLUS, a knot in any of the joints formed by the epiphyſis of a bone. In the fingers it is called a knuckle.

CONDYLUS, in botany, ſignifies the joints of plants.

CONE, in geometry, a ſolid body, having a circle for its baſe, and terminated in a point or vertex.

If the axis be perpendicular to the baſe, it is ſaid to be a right cone: and if inclined or oblique, a ſcalenous cone. Scalenous cones are again divided into obtuſe-angled, and acute-angled.

CONESSI, a ſort of bark of a tree which grows on the Coromandel-coaſt in the Eaſt-Indies, and is recommended in a letter to Mr. Monro, in the Medical Eſſays, as a ſpecific in diarrhœas.

CONFECTION, in pharmacy, any thing prepared with ſugar, in particular it imports ſomething preſerved, eſpecially dry ſubſtances.

CONFECTS, fruit, flowers, herbs, roots, &c. when boiled and prepared with ſugar or honey, to diſpoſe them to keep, and render them more agreeable to the taſte.

CONFEDERACY, in a general ſenſe, a league or alliance between ſeveral princes and ſtates, to carry on a common cauſe.

CONFEDERACY, in law, when two or more combine together to do ſome unlawful action.

CONFESSION, in a legal ſenſe, an acknowledgement of ſome truth, though in prejudice of the perſon that makes the acknowledgement.

CONFESSION, among divines, the verbal acknowledgement which a Chriſtian makes of his ſins.

CONFESSIONAL, or CONFESSIONARY, a place in churches under the great altar, where the bodies of deceaſed ſaints, martyrs, and confeſſors, were depoſited.

This word is alſo uſed by the Romaniſts for a deſk, or a kind of a cloſet in the church where the confeſſor takes the confeſſions of the penitents.

CONFESSOR, in the Romiſh church, a prieſt impowered to receive the confeſſions of penitents, and to give them abſolution.

CONFIGURATION, the outward figure which bounds bodies, and gives them their external appearance; being that which, in a great meaſure, conſtitutes the ſpecific difference between bodies.

CONFIRMATION, the act of ratifying or rendering a title, claim, report, or the like, more ſure and indiſputable.

CONFIRMATION, in law, a conveyance of an eſtate, or right in *eſſe*, from one man to another, whereby a voidable eſtate is made ſure and unavoidable, or a particular eſtate is encreaſed, or a poſſeſſion made perfect.

CONFIRMATION, in rhetoric, the third part of an oration, wherein the orator undertakes to prove the truth of the propoſition advanced in his narration; and is either direct or indirect.

Direct confirms what he has to urge for ſtrengthening his own cauſe. Indirect, properly called confutation, tends to refute the arguments of his adverſaries.

CONFIRMATION, in theology, the ceremony, of laying on the hands, for the conveyance of the Holy Ghoſt.

CONFISCATION, in law, the adjudication of effects to the public treaſury, as the bodies and effects of criminals, traitors, &c. Merchandizes that are prohibited, and brought aboard, or aſhore, without paying the duties, when ſeized, are confiſcated.

CONFLAGRATION, the general burning of a city or other conſiderable place.

This word is commonly applied to that grand period or cataſtrophe of our world, when the face of nature is to be changed by a deluge of fire, as formerly it was by that of water.

CONFLUENCE, or CONFLUX, among geographers, the place where two rivers unite their ſtreams.

CONFLUENT, among phyſicians, &c. an appellation given to that kind of ſmall-pox wherein the puſtules run into each other.

CONFUSED, an appellation given to things void of order and method, or which lie jumbled together in one heap: thus we ſay, a confuſed orator, confuſed viſion, ideas, &c.

CONFUSION, in a general ſenſe, is when things prior in nature do not precede, or poſterior do not follow; or a perturbation of order.

CONGE *d' elire*, in eccleſiaſtical polity, the king's permiſſion royal to a dean and chapter in the time of a vacancy, to chooſe a biſhop; or to an abbey or priory, of his own foundation, to chooſe their abbot or prior.

CONGE, in architecture, a mould in form of a quarter round, or a cavetto, which ſerves to ſeparate two members from one another, ſuch as that which joins the column to the cincture, called alſo apophyge.

CONGELATION, freezing, or ſuch a change produced by cold in a fluid body, that it becomes congealed.

CONGER, in zoology, the name of a ſpecies of muræna, with the upper edge of the back-fin black; called in Engliſh the ſea-eel.

CONGERIES, a collection or aggregate of ſeveral particles or bodies united into one maſs.

CONGLUTINATION, the gluing or faſtening any two bodies together by the intromiſſion of a third, whoſe parts are unctuous and tenacious, in the nature of glue. See the article GLUE.

CONGREGATION, an aſſembly of ſeveral eccleſiaſtics united, ſo as to conſtitute one body.

CONGREGATION is likewiſe uſed for aſſemblies of pious perſons, in manner of fraternities.

CONGREGATIONALISTS, in church hiſtory, a ſect of proteſtants who reject all church-government, except that of a ſingle congregation. In other matters, they agree with the preſbyterians.

CONGRESS, in political affairs, an aſſembly of commiſſioners, envoys, deputies, &c. from ſeveral courts, meeting to concert matters for their common good.

* CONGREVE (WILLIAM) eſq. an eminent dramatic poet, ſon of William Congreve, eſq. was born in Ireland, in 1672, and educated at Trinity-college, Dublin; after which he began to ſtudy the law in the Middle Temple, London. His firſt performance was a novel, entitled *Incognita*, or Love and Duty reconciled, and he ſoon after began his comedy of the Old Batchelor, which, on its being acted, procured him many conſiderable friends, among which was Mr. Montague, afterwards the lord Hallifax, who obtained for him the poſt of one of the commiſſioners of the hackney-coaches; then gave him a place in the pipe-office, and afterwards a place in the cuſtoms, of ſix hundred pounds per annum, and the poſt of ſecretary to Jamaica, which brought him in ſeven hundred pounds a year. It is not to be wondered at, that, after ſuch encouragement, he ſhould ſoon make his appearance again on the ſtage, and accordingly, the year after, he brought on the Double Dealer. In 1695 he produced his comedy of Love for Love. The ſame year he addreſſed to king William an ode upon the taking of Namur. Having eſtabliſhed his reputation as a comic writer, he reſolved to attempt a tragedy, and in 1697 was acted his Mourning Bride, which met with great applauſe. He was now called off to engage in another ſpecies of writing; Mr. Jeremy Collier attacked him as a dangerous immoral author. An anſwer was neceſſary, and therefore an anſwer was given, under the title of Amendments of Mr. Collier's falſe and imperfect Citations, &c. It was ſuppoſed this quarrel gave Mr. Congreve ſome diſtaſte to the ſtage, yet he afterwards brought on another comedy, intitled the Way of the World, which not taking, completed his diſguſt to the theatre. He amuſed himſelf afterwards with compoſing original poems and tranſlations, which he collected in one volume, and publiſhed in 1710. The greater part of the laſt twenty years of his life he ſpent in eaſe and retirement, but towards the end of

it, being much afflicted with the gout, which brought on a general decay, he died on the 19th of January, 1728-9, and as he had lived in the ſtricteſt intimacy with the great, they now ſhewed their reſpect to his memory; for on the 26th of January, his body was removed from his houſe in Surry-ſtreet in the Strand, to the Jeruſalem chamber, where it lay in ſtate, and the ſame evening was carried with great ſolemnity into king Henry the Seventh's chapel, and was interred in the abbey. The pall was ſupported by the duke of Bridgewater, the earl of Godolphin, lord Cobham, lord Wilmington, brigadier-general Churchill, and the honourable George Berkeley. Some time after, an elegant monument was erected to his memory, in which is a half length figure of him in white marble, placed on a pedeſtal of fine Egyptian marble, and enriched with emblematical devices relating to the drama. Underneath is this inſcription.

"Mr. William Congreve, died Janu-
"ary 19, 1728, aged fifty-ſix, and was
"buried near this place. To whoſe moſt
"valuable memory this monument is ſet
"up, by Henrietta, ducheſs of Marlbo-
"rough, as a mark how dearly ſhe re-
"members the happineſs ſhe enjoyed in
"the ſincere friendſhip of ſo worthy and
"honeſt a man; whoſe virtue, candour,
"and wit, gained him the love and eſteem
"of the preſent age; and whoſe writ-
"ings will be the admiration of the fu-
"ture."

CONGRUITY, in the ſchools, a ſuitableneſs or relation of agreement between things.

CONGRUITY, in geometry, is applied to figures, lines, &c. which being laid upon each other, exactly agree in all their parts, as having the very ſame dimenſions.

CONIC-SECTIONS, curves formed from the ſection of a cone by a plane. The curves generally called conic-ſections are three, viz. the ellipſis, parabola, and hyperbola; for though the triangle and circle are formed from the ſection of a cone, they are not uſually conſidered in that capacity. All diameters in a circle and ellipſis interſect one another in the center of the figure within the ſection. In the parabola they are all parallel amongſt themſelves and to the axis; but in the hyperbola they interſect one another, but this without the ſection, in the common center of the oppoſite ſections. For the moſt eſſential properties of the conic-ſections. See Ellipsis, Hyperbola, and Parabola.

CONIFEROUS-TREES, in gardening, ſuch as bear hard, dry ſeed veſſels of a conical figure, conſiſting of ſeveral woody parts, being moſtly ſcaley, adhering cloſely together, and ſeparating when ripe.

Of this ſort is the cedar of Lebanon, fir, pine, &c.

CONJUGATE DIAMETER, or *Axis of an Ellipſis*, the ſhorteſt of the two diameters, or that biſecting the tranſverſe. See Axis.

CONJUGATION, in grammar, a regular diſtribution of the ſeveral inflexions of verbs in their different voices, moods, tenſes, numbers and perſons, to diſtinguiſh them from one another. The Latins have four conjugations, diſtinguiſhed by the terminations of the infinitive *are*, *ere*, *ere*, and *ire*; the vowels before *re* of the infinitive in the firſt, ſecond, and fourth conjugations being long vowels, and that before *re* in the infinitive of the third being a ſhort one. See Vowel. The Engliſh have ſcarce any natural inflexions, deriving all their variations from additional particles, pronouns, &c. whence there is ſcarce any ſuch thing as ſtrict conjugations in that language.

The French grammarians reduce the number of conjugations of regular verbs in their language to that in the Latin, and theſe terminating in *er*, *re*, *ir*, and *oir*.

CONJUGATION, in anatomy, is applied to a pair of nerves ariſing together, and ſerving the ſame operation, ſenſation, and motion.

CONJUNCTION, in aſtronomy, the meeting of two ſtars or planets in the ſame degree of the zodiac.

This conjunction is either true, or apparent. The true conjunction is when a right line, drawn from the eye through the center of one of the bodies, would paſs through that of the other: in this caſe the bodies are in the ſame degree of longitude and latitude: and here the conjunction is alſo ſaid to be central, if the ſame line, continued from the two centers thro' the eye, do alſo paſs thro' the center of the earth. Apparent conjunction is when the two bodies do not meet preciſely in the ſame point, but are joined with ſome latitude. In this caſe a right line, drawn through the center of the two bodies, would not paſs through the center of the earth, but through the eye of the ſpectator: this conjunction is alſo called partile. The moon is in conjunction with the ſun, when they meet in the ſame point of the ecliptic, which happens every month; and eclipſes of the ſun are always occaſioned by the conjunction of the ſun and moon in or near the nodes of the ecliptic.

CONJUNCTION, in grammar, an undeclinable word, or particle, which ſerves to join words and ſentences together, and thereby ſhews their relation or dependence one upon another. The conjunction, which is uſually placed laſt in the eight parts of ſpeech, is of great uſe to render the diſcourſe ſmooth and fluent, and ſerves many good purpoſes in the argumentative or narrative ſtyle; but ſhould ever be omitted where a perſon ſpeaks with emotion, as only ſerving to weaken and enervate it. Conjunctions are of ſeveral kinds, as,

Adverſative, cauſal, concluſive, conditional, copulative, continuative, disjunctive, and dubitative, whoſe names explain them ſufficiently.

CONJURATION, magic words, characters, or ceremonies, whereby evil ſpirits, tempeſts, &c. are ſuppoſed to be raiſed, or driven away.

CONNECTION, or CONNEXION, the relation whereby one thing aderes to, or depends upon anothor.

CONNECTION, or CONTINUITY, in the drama, conſiſts in the joining of the ſeveral ſcenes together. The connection is ſaid to be obſerved, when the ſcenes of an act ſucceed one another immediately, and are ſo joined, as that the ſtage is never left empty.

CONNIVENT VALVES, in anatomy, thoſe wrinkles, cellules, and vaſcules, found in the inſide of the two great inteſtines, the ilium and jejunum.

CONNOISSEUR, a French word much uſed of late in Engliſh, to ſignify a perſon well verſed in any thing: whence it is uſed for a critic, or a perſon who is a thorough judge of any ſubject.

CONOCARPUS, button-tree, in botany.

CONOID, in geometry, a ſolid body, generated by the revolution of a conic ſection about its axis.

Elliptical CONOID, a ſolid formed by the revolution of an ellipſis about one of its diameters, and more generally called a ſpheroid. See PARABOLA.

Hyperbolical CONOID, is generated by the revolution of an hyperbola about its axis. See HYPERBOLA.

CONOIDES, in anatomy, a gland found in the third ventricle of the brain, called pinealis, from its reſemblance to a pine-apple. Deſcartes fixed the ſeat of the rational ſoul in this gland. See BRAIN.

CONSANGUINITY, the relation ſubſiſting between perſons of the ſame blood, or who are ſprung from the ſame root.

CONSCIENCE, in ethics, a ſecret teſtimony of the ſoul, whereby it approves things that are naturally good, and condemns thoſe that are evil. When it judges of an action to be performed, it is called in the ſchools an antecedent conſcience; and when it paſſes ſentence on an action which is performed, it is called a ſubſequent conſcience. When the mind is ignorant or uncertain about the moment of an action, or its tendency to good; or when there are ſeveral circumſtances in the caſe, ſome of which being doubtful, render the mind dubious concerning the morality of an action, this is called a doubtful or ſcrupulous conſcience; and if it miſtakes concerning theſe, it is called an erroneous conſcience. If the error or ignorance is involuntary or invincible, the action proceeding from that error, or from that ignorance, is reckoned innocent. But if they are the effect of negligence, or of affectation, the conduct flowing from ſuch error is criminal. Not to follow one's conſcience, though erroneous and ill-formed, ſome divines reckon criminal, as it is the guide of life, and to counteract it ſhews an incorrigible ſpirit; yet to follow an erroneous conſcience, is likewiſe criminal, if the error which miſled the conſcience was the effect of inattention, or of any criminal paſſion. Some divines maintain that conſcience is infallible, and hold it to be that immutable law by which God will judge men. They deny that the underſtanding can be the ſource of errors, and attribute them all to the will.

CONSECRATION, the act of devoting any thing to the ſervice and worſhip of God. The Moſaical law ordained, that all the firſt-born, both of man and beaſt, ſhould be ſanctified or conſecrated to God. We find alſo, that Joſhua conſecrated the Gibeonites, as Solomon and David did the Nethinims, to the ſervice of the temple; and that the Hebrews ſometimes conſecrated their fields and cattle to the Lord, after which they were no longer in their power. Among the ancient chriſtians, the conſecration of churches was performed with much pious ſolemnity. In what manner it was done for the three firſt ages, is uncertain; the authentic accounts reaching no higher than the fourth, when, in the peaceable reign of Conſtantine, churches were every where built, and dedicated with great ſolemnity. The Romaniſts have much of pious foppery in the ceremonies of conſecration; which they beſtow on almoſt every thing, as bells, candles, books, water, oil, aſhes, palms, ſwords, banners, pictures,

pictures, croſſes, agnus dei's, roſes, children's clouts, &c. In England, churches have been always conſecrated with particular ceremonies, ſince the year 153, the form of which was left to the diſcretion of the biſhop. Conſecration is particularly uſed for the benediction of the elements in the euchariſt.

CONSENT *of parts*, in the animal œconomy, an agreement or ſympathy, whereby one part is immediately affected, another at a diſtance becomes affected in the ſame manner.

CONSEQUENCE, in logic, the concluſion or reſult from reaſon and argument. The conſequence is that other propoſition in which the extremes or premiſes of a ſyllogiſm are joined, or ſeparated; and is gained from what was aſſerted in the premiſes. This word, in a more reſtrained ſenſe, is uſed for the relation or connection between two propoſitions, whereof one is inferred from the other.

CONSEQUENT *of a Ratio*, in mathematics, the latter of the two terms of a ratio, or that to which the antecedent is compared; thus in *m* to *n*, *n* is the conſequent, and *m* the antecedent. See RATIO and PROPORTION.

CONSERVATOR, an officer ordained for the ſecurity of the privileges of ſome cities and communities, having a commiſſion to judge of, and determine the differences among them.

CONSERVE, in pharmacy, a form of medicine, contrived to preſerve the flowers, herbs, roots, or fruits, of ſeveral ſimples, as near as poſſible to what they are when freſh gathered.

Conſerves are made up by beating up the thing to be preſerved with ſugar, viz. a triple quantity thereof to thoſe that are moſt moiſt, and a double quantity to thoſe that are leaſt ſo.

CONSIDERATION, in law, material cauſes or ground of a contract, without which the party contracting would not be bound.

CONSIGNMENT, in law, the depoſiting any ſum of money, bills, papers, or commodities in good hands; either by appointment of a court of juſtice, in order to be delivered to the perſons to whom they are adjudged; or voluntarily, in order to their being remitted to the perſons they belong to, or ſent to the places they are deſigned for.

CONSIGNMENT *of Goods*, in commerce, the delivering or making them over to another: thus, goods are ſaid to be conſigned to a factor, when they are ſent to him to be ſold, &c. or when a factor ſends back goods to his principal, they are ſaid to be conſigned to him.

CONSISTORY, at Rome, an eccleſiaſtical aſſembly held in the preſence of the pope, for the reception of princes, or their ambaſſadors, for the canonization of ſaints, for the promotion of cardinals, and other important affairs.

CONSOLATION, a figure in rhetoric, wherein the orator endeavours to moderate the grief of another.

CONSOLE, in architecture, an ornament cut upon the key of an arch, which has a projecture, and, on occaſion, ſerves to ſupport little corniches, figures, buſts, and vaſes. They are alſo called mutules and modillions, according to their form. Some of them are ſtriated, others in form of cartouches, others have drops in form of triglyphs.

CONSONANCE, in muſic, is often uſed in the ſame ſenſe with concord, viz. for the union or agreement of two ſounds produced at the ſame time, the one grave and the other acute; which mingling in the air in a certain proportion, occaſions an accord agreeable to the air. Notes in conſonance conſtitute harmony, as notes in ſucceſſion conſtitute melody. The firſt conſonance is the octave, then the fifths, the fourths, the thirds, and ſixths: the reſt are multiplies, or repetitions of theſe.

CONSONANT, a letter that cannot be ſounded without ſome ſingle or double vowel before or after it.

Conſonants are firſt divided into ſingle and double: the double are *x* and *z*, the reſt are all ſingle, and theſe are again divided into mutes and liquids; eleven mutes *b*, *c*, *d*, *f*, *v*, *g*, *j*, *k*, *p*, *q*, *t*, and four liquids, *l*, *m*, *n*, *r*. Another diviſion is into guttural, palatal, lingual, dental, and labial, from the five principal organs of the voice, viz. the throat, palate, tongue, teeth, lips; to which ſome add the naval, from the noſe. To find all the conſonants that may be formed in any language, there needs nothing but to obſerve all the modifications that the ſounds of ſpeech will admit of, by which we ſhall have all the conſonants practicable.

Queen CONSORT, the wife of a king, in contradiſtinction to a ſovereign princeſs, or queen inveſted with ſupreme authority. See QUEEN.

CONSPIRACY, in law, ſignifies an agreement between two or more, falſely to indict, or procure to be indicted, an innocent perſon of felony.

CONSPIRATORS are, by ſtatute, defined to be ſuch as bind themſelves by oath, covenant, or other alliance, to aſſiſt one another, falſely and maliciouſly to indict perſons, or falſely to maintain pleas.

Conſpirators in treaſon, are thoſe that plot againſt the king and government.

CONSPIRING POWERS, in mechanics, thoſe acting in directions not oppoſite. See POWER.

CONSTABLE. Lord high conſtable, an ancient officer of the crowns both of England and France, whoſe authority was ſo very extenſive, that the office has been laid aſide in both kingdoms, except on particular occaſions, ſuch as the king's coronation. With reſpect to France, the juriſdiction and functions of this office are now in the marſhals.

The function of the conſtable of England conſiſted in the care of the common peace of the land, in deeds of arms and matters of war. By a law of Richard II. the conſtable of England has the determination of things concerning wars and blazonry of arms, which cannot be diſcuſſed by the common law. The firſt conſtable was created by the Conquerer: the office continued hereditary till the thirteenth of Henry VIII. when it was laid aſide, as being ſo powerful as to become troubleſome to the king. We have alſo conſtables denominated from particular places, as conſtables of the Tower, of Dover-caſtle, of Windſor-caſtle, of the caſtle of Caernarvon, and many other of the caſtles of Wales.

From the lord-high conſtable are derived thoſe inferior ones, ſince called the conſtables of hundreds or franchiſes, who were firſt ordained in the thirteenth of Edward I. by the ſtatute of Wincheſter, which, for the conſervation of peace and view of armour, appointed that two conſtables ſhould be choſen in every hundred. Theſe are what we now call high-conſtables, the increaſe of people and offences having made it neceſſary to appoint others under theſe, in every town, called petty-conſtables, who are of the like nature, though of inferior authority to the other. The high-conſtable over the whole hundred is uſually choſen and ſworn into his office by the juſtices of the peace, in their ſeſſions: and as to petty-conſtables in towns, villages, &c. the right of chooſing them belongs to the court-leet, though they may be elected by the pariſhioners. They are appointed yearly, and ought to be men of honeſty, knowledge, and ability.

CONSTANT, an appellation given to things which remain in the ſame ſtate, without changing their nature or circumſtances.

* CONSTANTINOPLE, a city of Turky in Europe, ſeated in Romania, on a neck of land advancing towards Anatolia, from which it is ſeparated by a channel about a mile in breadth, formerly called the Boſphorous of Thrace. The ſea of Marmora waſhes its walls on the ſouth, and the Black Sea being on the north, renders its ſituation the moſt convenient in the univerſe; for it ſeems as if the channel of the Dardanelles, and that of the Black Sea were made on purpoſe to bring it the riches of all the four quarters of the world. The port or harbour is ſix miles in circuit, and the waters are ſo deep, that the largeſt veſſels may come cloſe to the ſhore without danger. This city, which was formerly called Byzantium, was firſt built by Pauſanias, king of Sparta, though ſome ſay he only rebuilt it. It was demoliſhed by the emperor Severus to puniſh the revolt of its inhabitants; but was afterwards repaired by Conſtantine the Great, from whom it obtained its preſent name. It continued after this the ſeat of the eaſtern empire for a great number of years, not without being taken and retaken by different nations till at length it fell into the hands of Mahomet II. emperor of the Turks, on the 27th of May 1423, and has been ever ſince in the poſſeſſion of the Turks, who call it Iſtampol. Its form is triangular; two of its ſides are waſhed by the ſea. It may be about eighteen miles in circumference about the walls; but if the ſuburbs are included, it is at leaſt twenty-ſix. The walls of Conſtantinople are very good. Thoſe on the land ſide have a double range, twenty feet from each other, defended by a ditch about twenty-five feet broad. The outward wall is twelve feet high, and has two hundred and fifty low towers. The inner wall is twenty feet high, and its towers which anſwer to the outer, are well proportioned. The battlements, the curtains, and the port-holes are well contrived, but there is no appearance of artillery. They are built chiefly with free-ſtone, and there are five gates on this ſide. The walls from the ſeven towers to the ſeraglio, and thoſe along the harbour, ſeem to be ſomewhat diſregarded. There are ſeven gates from the points of

the ſeraglio to the ſeven towers, and eleven towards the harbour, all which are entered up an aſcent. When we view the city on the outſide nothing can appear more delightful; becauſe the roofings, terrace-balconies, and gardens, form a great variety of amphitheatres, ſet off with the bezeſtans, caravanſerais, ſeraglios, and moſques. The domes of theſe laſt are covered with lead or gilding, and with their high ſlender minarets or towers, adorned with creſcents at the tops, appear very beautiful to thoſe who ſtand at the entrance of the channel of the Black Sea.

Yet notwithſtanding all this promiſing appearance of the outſide at a diſtance, when you come near it your expectations are greatly balked, for in the ſuburb of Galata, the uſual landing-place, the houſes are low, and moſtly built of clay and wood, ſo that a fire will conſume thouſands of them in a day. Thoſe within the walls are inferior to the moſt contemptible of ours, none being above two ſtories high, ſome of rough ſtone, ſome of ſun-dried brick, but moſt of wood, and the roofs riſing, but very little are covered with tiles. But thoſe belonging to the principal perſons are flat, and adorned with trees, and flowers of beautiful colours. There are many vacant places in the city, and many rows of ſhops, where the women never come. The ſtreets are generally exceeding narrow, and ſome are raiſed on the ſides for the ſake of cleanlineſs.

There are ſeven royal moſques in the city, which are magnificent ſtructures, and kept in good condition. Theſe and all the reſt ſtand by themſelves in an incloſure planted with fine trees, and adorned with pleaſant fountains. Each moſque has a principal dome, with others ſmaller, which have a very fine effect. The minerets, from which they call people to prayers, are as high as our ſteeples, but very ſlender.

The boats uſed in the harbours are like Venetian gondolas, and are extremely light and pretty. This harbour opens to the eaſt, over againſt Scutari. The river Licus, which falls into it, is made up of two ſtreams, on the largeſt of which is a paper-mill; and the torrent is ſo ſtrong, that it is of great uſe in cleanſing the harbour. The only wind that can diſturb the ſhips is from the eaſt, and when that blows, it cauſes ſuch a bawling among the ſeamen, and ſuch a barking of the dogs, that one would think the city was going to be ſwallowed up, and is a great annoyance to the ſeraglio. This is near three miles in circumference, and is a kind of a triangle, whoſe ſide next the city is longeſt. The apartments are on the top of a hill, and the gardens below. The outſide of the palace has nothing curious. The gardens are planted with cypreſs and ever-green trees, to conceal the ſultanas from any overlookers when they are walking in them. The apartments have been made at different times, according to the capriciouſneſs of emperors, or their ſultanas. Thus this famed palace is nothing but a cluſter of houſes, put together without any manner of order. The principal entrance of the ſeraglio is through a pavilion or gate-way; but it looks rather like a guard-houſe than a building belonging to a palace.

The whole ſeraglio is under the care of black eunuchs, who are deprived of their virility in Ethiopia, and ſent from thence young. Some of theſe are appointed as guards to the women, and they are ſo vigilant, that there is no poſſibility of coming near them; not to mention the raſhneſs of any ſuch attempt, which would be puniſhed with immediate death. When an emperor dies, his women are ſent to the old ſeraglio in another part of the city, where they are as ſtrictly watched as before. When the ſultanas walk in the gardens, the gardeners run behind a ſcreen, placed near the walls, and look towards the ſea; for a ſingle glance, if perceived, would coſt them their lives.

CONSTAT, in law, a certificate that the clerk of the pipe and auditors of the exchequer grant at the requeſt of any perſon who intends to plead or move in that court for the diſcharge of any thing.

CONSTELLATION, in aſtronomy, a ſyſtem of ſeveral ſtars ſeen in the heavens, near to one another. Aſtronomers not only mark out the ſtars, but that they may better bring them into order, they diſtinguiſh them by their ſituation and poſition in reſpect to each other; and therefore they diſtribute them into aſteriſms, or conſtellations, allowing ſeveral ſtars to make up one conſtellation: and for the better diſtinguiſhing and obſerving them, they reduce the conſtellations to the forms of animals, as men, bulls, bears, &c. or to the images of ſome things known, as of a crown, a harp, a balance, &c. or to give them the names of thoſe, whoſe memories, in conſideration

tion of ſome notable exploit, they choſe to tranſmit to future ages. The diviſion of the ſtars by images and figures is of great antiquity, and ſeems to be as old as aſtronomy itſelf: for in the moſt ancient book of Job, Orion, Arcturus, and the Pleiades are mentioned; and we meet with the names of many of the conſtellations in the writings of the firſt poets Homer and Heſiod. The ancients, in their diviſion of the firmament, took in only ſo much as came under their notice, diſtributing it into forty-eight conſtellations; but the modern aſtronomers comprehend the whole ſtarry firmament, dividing it into three regions: 1. The zodiac, containing the twelve ſigns. 2. All that region of the heavens that lies on the north-ſide of the zodiac, which contains twenty-one conſtellations, beſides thoſe of Antinous, and Berenice's hair. 3. That region on the ſouthern-ſide of the zodiac, which contains fifteen conſtellations, known to the ancients, together with 12 lately addded. The Galaxy, or Malky-way, is alſo to be reckoned among the conſtellations. See each conſtellation, and the number of ſtars it contains, under its proper head, *Aries*, *Taurus*, *Gemini*, *Cancer*, &c.

Without the compaſs of theſe conſtellations there are ſeveral ſtars which cannot be reduced to any of the forms mentioned, and theſe by the ancients are called Informes or Sporades; out of which ſome great aſtronomers have made new conſtellations, as Charles's heart, and Sobieſki's ſhield. See *Informes* and *Sporades*.

CONSTIPATION, in medicine, a hardneſs of the belly, with great coſtiveneſs.

CONSTIUENT PART, in phyſiology, an eſſential part in the compoſition of any thing, differing little from what is otherwiſe called element or principle.

CONSTITUTION, in matters of policy, the form of government eſtabliſhed in any country or kingdom.

CONSTITUTION, in a phyſical ſenſe, that particular diſpoſition of the human body, which reſults from the properties and mutual actions of the ſolids and fluids, and which renders them capable of exerciſing the functions proper and conformable to nature. An equal conſtitution is that wherein the four humours, blood, phlegm, bile, and melancholy, are mixed in a due proportion; and according as one or other of theſe predominates, the conſtitution is denominated ſanguine, phlegmatic, bilious, or melancholy and atrabilious.

CONSTRICTOR, an appellation given to ſeveral muſcles on account of their conſtringing ſome of the orifices of the body.

CONSTRUCTION, in geometry, the drawing ſuch lines, ſuch a figure, &c. as are previouſly neceſſary for the making any demonſtration appear more plain and undeniable.

CONSTRUCTION *of Equations*. See *Equations*.

CONSTRUCTION, in grammar, the connecting the words of a ſentence according to the rules of the language. Conſtruction is either ſimple or figurative, according as the parts of the diſcourſe are placed in their natural order, or recede from that ſimplicity, when ſhorter and more elegant expreſſions are uſed than the nature of it affords.

The conſtruction of words, called ſyntax, is diſtinguiſhed into two parts, concord and regimen. See *Syntax*, *Concord*, and *Regimen*.

CONSUBSTANTIAL, among divines, a term denoting ſomething of the ſame ſubſtance with another. Thus the orthodox believe the Son of God to be conſubſtantial with the Father.

CONSUBSTANTIATION, a tenet of the Romiſh and Lutheran churches with regard to the manner of the change made in the bread and wine in the euchariſt. The divines of both profeſſions maintain, that after conſecration, the body and blood of our Saviour are ſubſtantially preſent, together with the ſubſtance of the bread and wine, which is called conſubſtantiation or impanation.

CONSUL, the chief magiſtrate of the Roman commonwealth.

CONSUL, at preſent, an officer eſtabliſhed by virtue of a commiſſion from the king and other princes, in all foreign countries of conſiderable trade, to facilitate and diſpatch buſineſs, and protect the merchants of the nation.

CONSUMMATION, the end or completion of a work. Thus we ſay, the conſummation of all things, meaning the world.

CONSUMPTION, in medicine. See *Phthiſis*.

CONTACT, is when one line, plane, or body, is made to touch another; and the parts that thus touch, are called the points or places of contact. The contact of two ſpherical bodies, and of a tangent with the circumference of a circle, is only in one point.

CONTEMPLATION, an act of the mind, whereby it applies itſelf to conſider and reflect upon the works of God, nature, &c.

CONTEMPORARY, a perſon or thing exiſting in the ſame age with another.

CONTENT, in geometry, the area or quantity of matter or ſpace included in certain bounds.

For the contents of veſſels of different kinds. See GAUGING.

CONTEXT, that part of ſcripture or of a writing that precedes and follows the text. See TEXT.

CONTIGUITY, in geometry, is when the ſurface of one body touches that of another.

CONTIGUOUS ANGLES, in geometry, ſuch as have one leg common to each angle, and are ſometimes called adjoining angles, in contradiſtinction to thoſe produced by continuing their legs through the point of contact, which are called oppoſite or vertical angles.

CONTINENT, in geography, a great extent of land not interrupted by ſeas, in contradiſtinction to Iſland, Peninſula, &c. By the relations we have of the diſpoſition of the globe from late navigators, we may count four continents, of which there are but two well known. The firſt, called the ancient continent, comprehends Europe, Aſia, and Africa. The ſecond is the new continent, called America. The third, which is called the Northern, or Artic continent, comprehends Greenland, the lands of Spitzberg, Nova Zembla, and the lands of Jeſſo. The fourth comprehends New Guinea, New Zealand, New Holland, and ſeveral others hitherto little known. Some authors think the two firſt continents are in reality only one, imagining the northern parts of Tartary to join with thoſe of North America.

CONTINGENT, caſual or uncertain.

CONTINGENT, a term of relation for the quota that falls to any perſon upon a diviſion. Thus each prince in Germany, in time of war, is to furniſh ſo many men, ſo much money and ammunition for his contingent.

CONTINGENT USE, in law, an uſe limited in a conveyance of lands which may or may not happen to veſt, according to the contingency mentioned in the limitation of the uſe. And a contingent remainder, is when an eſtate is limited to take place at a time to come, on an uncertain event.

CONTINUAL CLAIM, in law, a claim made from time to time within every year and a day to lands, &c. which in ſome reſpect one cannot attain without danger.

CONTINUAL PROPORTION. See *Proportion.*

CONTINUANTO, a term uſed in a ſpecial declaration of treſpaſs, where the plaintiff would recover damages for ſeveral treſpaſſes in one and the ſame action.

CONTINUED PROPORTION, in arithmetic, that where the conſequent of the firſt ratio is the ſame with the antecedent of the ſecond; as 4 : 8 : : 8 : 16, in contradiſtinction to diſcrete proportion. See DISCRETE.

CONTINUED *Thorough Baſs*, in muſic, that which continues to play conſtantly during the recitatives, and to ſuſtain the chorus. See CHORUS.

CONTOUR, in painting, the out-line, or that which defines a figure. Contour, with the Italian painters, ſignifies the lineaments of the face.

CONTOURNE, in heraldry, is uſed when a beaſt is repreſented ſtanding or running with its face to the ſiniſter ſide of the eſcutcheon, they being always ſuppoſed to look to the right, if not otherwiſe expreſſed.

CONTRABAND, in commerce, a prohibited commodity bought or ſold, imported or exported, in prejudice to the laws and ordinances of a ſtate.

CONTRACT, a mutual conſent of two or more parties, who voluntarily promiſe and oblige themſelves to do ſomething, pay a certain ſum, or the like. All donations, exchanges, leaſes, &c. are ſo many different contracts.

CONTRACT, in common law, an agreement or bargain between two or more perſons with a legal conſideration or cauſe; as where a perſon ſells goods, &c. to another for a ſum of money; or covenants, in conſideration of a certain ſum, or an annual rent, to grant a leaſe of a meſſuage, &c.

CONTRACT, the inſtrument in writing which ſerves as a proof of the conſent granted, and the obligation paſſed between the parties.

CONTRACTILE FORCE, that property or power inherent in certain bodies, whereby, when extended, they are enabled to draw themſelves up again to their former dimenſions.

CONTRACTION, in grammar, is the reducing of two ſyllables into one, as *can't* for *cannot*; *heav'n* for *heaven*.

CONTRACTION, in phyſics, the diminiſhing the dimenſions of a body, or the cauſing its parts to approach nearer to each other, oppoſed to dilatation or expanſion.

CONTRADICTION, a direct oppoſition, wherein one thing is found directly contrary to another.

CONTRADICTORY PROPOSITIONS, in logic, ſuch as differ both in quality and quantity, one being univerſal, and the other particular, which conſtitutes the oppoſition of quantity; one affirmative and the other negative, which makes the oppoſition in quality.

CONTRA-FISSURE, in ſurgery, a kind of fracture, or fiſſure, in the cranium, which ſometimes happens on the ſide oppoſite to that which received the blow; or at leaſt, at ſome diſtance from it. The moſt certain ſymptoms of a contra-fiſſure are vehement pains, vomittings, vertigo, noiſe in the ears, &c. If theſe happen, and no fracture or depreſſure of the cranium be found where the wound was received, there is a ſuſpicion of a contra-fiſſure, eſpecially if the patient is apt to point to that part. If the ſymptoms be by intervals, or not to a great degree, or there be reaſon to believe the fiſſure to have reached only through one of the tables, it is ſufficient to bore down to the diploe, and dreſs with balſamic medicines: but where any violent ſymptoms come on, which demonſtrate an extravaſation of blood in the cavity of the cranium, the trepan is to be called for without delay. See Trepan.

CONTRA-INDICATION, in medicine, an indication which forbids that to be done, which the main ſcope of a diſeaſe points out: as if, in the cure of a diſeaſe, a vomit was judged proper; if the patient be ſubject to a vomiting of blood, it is a ſufficient contra-indication as to its exhibition. See Indication.

CONTRAST, in painting and ſculpture, an oppoſition or difference of poſition, attitude, &c. as of two or more figures, contrived to make variety in a painting, &c. as where, in a groupe of three figures, one is ſhewn before, another behind, and another ſideways, they are ſaid to be in contraſt. The contraſt is to be obſerved in the poſition of ſeveral figures, and in that of the ſeveral members of the ſame figure: thus, if the right arm advance fartheſt, the right leg is to be hindermoſt; if the eye be directed one way, the arm to go the contrary way, &c. the contraſt muſt be purſued even in the drapery.

CONTRAVALLATION, or *the Line of* CONTRAVALLATION, in fortification, a trench guarded with a parapet, and uſually cut round about a place by the beſiegers, to ſecure themſelves on that ſide.

CONTRAYERVA, the root of a plant growing in Peru and other parts of the Spaniſh Weſt-Indies, which was firſt brought into Europe, about the year 1581, by Sir Francis Drake. This root, freed from the fibres, which are much weaker than the tuberous part, has a light aromatic ſmell; and a roughiſh, bitteriſh, penetrating taſte, which is not eaſily concealed by a large admixture of other ſubſtances. It is given, as a diaphoretic and antiſeptic, in low and malignant fevers, and appears to be one of the mildeſt and ſafeſt of the ſubſtances of the pungent kind commonly made uſe of in theſe intentions; not being liable to produce, though taken pretty freely, any conſiderable heat. The doſe, in ſubſtance, is from five or ſix grains to half a dram and more; in decoction or infuſion, from half a dram to two drams.

CONTRE, in heraldry, an appellation given to ſeveral bearings, on account of their cutting the ſhield contrary and oppoſite ways: thus we meet with contre-band, contre-chevron, contre-pale, &c. when there are two ordinaries of the ſame nature oppoſite to each other, ſo as colour may be oppoſed to metal, and metal to colour.

CONTRIBUTION, the payment of each perſon's quota, or ſhare in ſome impoſition or common expence.

CONTRIBUTION, in a military ſenſe, an impoſition or tax paid by frontier-countries to an enemy, to prevent their being plundered and ruined.

CONTRITION, in theology, a ſorrow for our ſins, reſulting from the reflection of having offended God, from the ſole conſideration of his goodneſs, without any regard to the puniſhment due to the treſpaſs, and attended with a ſincere reſolution of reforming them. The Scripture never uſes this term in this ſenſe; but there are ſeveral paſſages which prove, that without contrition there is no repentance, and without repentance no remiſſions of ſins.

CONTROL, COMPTROL, or CONTROLE, is properly a double regiſter kept of acts, iſſues of the officers or commiſſioners in the revenues, army, &c. in order to perceive the true ſtate thereof, and to certify the truth, and the due keeping of the acts ſubject to the enregiſterment.

CONTROLLER, an officer appointed to control or overſee the accounts of other officers.

CONTROLLER *of the Navy.* See the article NAVY.

CONTUMACY, in law, a refuſal to appear in court, when legally ſummoned; or the diſobedience to the rules and orders of a court having power to puniſh ſuch offence.

CONTUSION, in medicine and ſurgery, a bruiſe, or a ſolution of continuity, produced in any part of the body by any inſtrument whoſe ſurface does not riſe by way of edge, but in any obtuſe figure; by this means a contuſion is diſtinguiſhed from a wound, which is a ſolution of continuity produced by a ſharp cutting inſtrument.

In the cure of a contuſion, we muſt attempt a reſolution, and if poſſible, prevent a ſuppuration, but much more a gangrene. Reſolution is principally performed, firſt, by rendering the extravaſated humours fluid; ſecondly, by relaxing the adjacent veſſels; and, thirdly, by procuring the reſorption of the extravaſated humours into the veſſels, by evacuating theſe veſſels, or by friction.

Bleed therefore plentifully; ſoon after exhibit a ſtrong, but not inflammatory purge; let a penetrating and reſolvent fomentation be applied to the part, and let warm frictions be uſed; mean time internal reſolvents, ſudorifics, and diuretics, are of conſiderable ſervice.

CONVALLIUM LILIUM, lily of the valley, in botany, a genus of perenneal plants, which grows wild in woods and ſhady places, and flowers in May. The flowers of this plant have a fragrant ſmell, and a penetrating bitteriſh taſte; both which they readily impart to watery and ſpirituous menſtrua.

It is principally from the volatile parts of theſe flowers that medicinal virtues have been expected in nervous and catarrhous diſorders; but probably their fixed parts alſo have a great ſhare in their efficacy. The flowers, dried and powdered, and thus diveſted of their odoriferous principle, prove ſtrongly ſternutatory. Watery or ſpirituous extracts made from them, given in doſes of a ſcruple or half a dram, act as gentle ſtimulating aperients and laxatives; and ſeem to partake of the purgative virtue, as well as of the bitterneſs of aloes.

CONVENTICLE, a private aſſembly or meeting for the exerciſe of religion.

CONVENTION, a treaty, contract, or agreement between two or more parties.

CONVENTION, a name given to an extraordinary aſſembly of parliament, or the ſtates of the realm, held without the king's writ.

CONVENTUAL, in general denotes ſomething belonging to a convent or monaſtry.

CONVERGING, or CONVERGENT LINES, in geometry, ſuch as continually approach nearer one another; or whoſe diſtance becomes ſtill leſs and leſs. Theſe are oppoſed to divergent lines, the diſtance of which become continually greater: thoſe lines which converge one way, diverge the other.

CONVERGING HYPERBOLA, one whoſe concave legs bend in towards one another, and run both the ſame way. See HYPERBOLA and CURVE.

CONVERGING RAYS, in optics, thoſe rays that, iſſuing from divers points of an object, incline towards another, till at laſt they meet and croſs, and then become diverging rays.

CONVERSE, in mathematics. One propoſition is called the converſe of another, when, after a concluſion is drawn from ſomething ſuppoſed in the converſe propoſition, that concluſion is ſuppoſed; and then, that which in the other was ſuppoſed, is now drawn as a concluſion from it: thus, when two ſides of a triangle are equal, the angles under theſe ſides are equal; and on the converſe, if theſe angles are equal, the two ſides are equal. See TRIANGLE.

CONVERSION, in a moral and religious ſenſe, implies a repentance of temper and conduct unworthy our nature, and unbecoming our obligations to its author, and a reſolution to act a wiſer and a better part for the future.

CONVERSION *of Equations*, in algebra, is when the quantity ſought, or any part or degree thereof, being in fractions, the whole is reduced to one common denomination, and then omitting the denominators, the equation is continued in the numerators only. See EQUATION.

CONVERT, one who has undergone converſion. See CONVERSION.

Convert is more frequently uſed in reſpect of changes from one religion to another.

CONVEX, the appellation given to the exterior ſurface of gibbous or globular bodies, in oppoſition to concave: thus we ſay, a convex frieze, lens, mirror, ſuperficies, &c. See FRIEZE, LENS, &c.

CONVEXITY, that ſhape of a body, on account of which it is denominated convex. See Convex.

CONVEYANCE, in law, a deed or inſtrument that paſſes land, &c. from one perſon to another.

The moſt uſual conveyances are deeds of gift, bargain and ſale, leaſe and releaſe, fines and recoveries, &c. The words *give and grant*, are neceſſary in a conveyance at common law; but though ſome maintain that conveyances ſhall operate according to the words; yet, of late, the judges have a greater regard to the paſſing of the eſtate, than to the manner by which it is paſſed.

CONVICT, in common law, a perſon found guilty of an offence by the verdict of a jury. The law implies that there muſt be a conviction before puniſhment for any offence. On a joint indictment, or information, ſome of the defendants may be convicted and others acquitted.

CONVICTION, in theology, expreſſes the firſt degree of repentance, wherein the ſinner becomes ſenſible of his guilt, of the evil nature of ſin, and of the danger of his own ways. See Contrition.

CONVOCATION, an aſſembly of the clergy of England, by their repreſentatives, to conſult of eccleſiaſtical matters. It is held during the ſeſſion of parliament, and conſiſts of an upper and a lower houſe. In the upper ſit the biſhops, and in the lower the inferior clergy, who are repreſented by their proctors, conſiſting of all the deans and archdeacons, of one proctor for every chapter, and two for the clergy of every dioceſe, in all one hundred and forty-three divines, viz. twenty-two deans, fifty-three arch-deacons, twenty-four prebendaries, and forty-four proctors of the dioceſan clergy. The lower houſe chooſes its prolocutor, whoſe buſineſs it is to take care that the members attend, to collect their debates and votes, and to carry their reſolutions to the upper houſe. The convocation is ſummoned by the king's writ, directed to the archbiſhop of each province, requiring him to ſummon all biſhops, deans, archdeacons, &c.

CONVOLVULUS, a genus of plants, diſtinguiſhed by the name of bindweed in Engliſh.

CONVOY, in military matters, a body of men to guard any ſupply of men, money, ammunition, or proviſions, conveyed by land into a town, army, or the like in time of war.

CONVOY, in naval affairs, any fleet or navy of merchant-ſhips bound on a voyage, or more particularly the ſhip or ſhips appointed to conduct and defend them on their paſſage.

CONVULSION, *Spaſmus*, in medicine, a preternatural and violent contraction of the membranous and muſcular parts, ariſing from a ſpaſmodic ſtricture of the membranes ſurrounding the ſpinal marrow, and the nerves diſtributed from it, and an impetuous influx of the nervous fluid into the organs of motion.

Though convulſions are terrible, they are not ſuddenly mortal: when they are recent, the patient young, and conſtitution ſound, an eaſy and ſhort cure is to be hoped for.

In the cure of the convulſive motions, we are firſt to correct the material cauſes which ſupport the diſorder; prepare them for an elimination, and commodiouſly evacuate them: then the violent and irregular commotions of the nervous parts muſt be allayed, and the nervous ſyſtem corroborated, to prevent a relapſe: the cure is not to be obtained by a great variety of draſtic remedies; but rather by mild medicines, and ſuch as are friendly to nature. If the diſorder ariſes from a reduncy of humours, or a thickneſs of the blood, Hippocrates adviſes venæſection, either in the foot or arm, to be uſed, or ſcarifications to be interpoſed: but theſe motions are rarely removed without a proper air, exerciſe, and regimen. Warm baths for the feet, prepared of river-water and chamomile flowers, have a ſingular efficacy; and alſo large draughts of cold ſimple water. If convulſions ariſe from exceſs of venery, the patient is by all means to abſtain from any thing that produces commotions. If they ariſe from a ſuppreſſion of the menſes, &c. they muſt be removed by recalling theſe evacuations.

CONVULSIVE, in medicine, a term applied to thoſe motions which naturally ſhould depend on the will, but are produced involuntarily by ſome external cauſe, as a contraction of the muſcles, &c. See Convulsion.

CONYZA, flea-bane, in botany, a genus of plants. The common ſort of which is recommended in the jaundice, to promote the menſes, and in the ſtrangury. Some alſo make an ointment of its leaves and root, which is ſaid to cure the itch.

COOLER, among brewers, diſtillers, &

&c. a large veſſel wherein certain liquors are cooled, after having been boiled.

COOLERS, in medicine, remedies which affect the organs of feeling with an immediate ſenſe of cold, being ſuch as have their parts in leſs motion than thoſe of the organs of feeling; as fruits, and all acid liquors: or ſuch as by a particular viſcidity, or groſſneſs of parts, give the animal fluids a greater conſiſtency than they had before, and conſequently retard their motion; having leſs of that inteſtine force on which their heat depends. Of this ſort are cucumbers, and all ſubſtances producing viſcidity.

COOM, or COMB *of Corn*, a dry meaſure containing four buſhels, or half a quarter. See MEASURE.

CO-ORDINATE, ſomething of equal order, rank, or degree with another.

COPAL, in natural hiſtory, a particular ſort of reſin brought in irregular lumps from New Spain, where it is ſaid to be obtained from different ſorts of large trees, of which eight are deſcribed by Hernandez. Solutions of copal have been greatly eſteemed as varniſhes, and the method of making the ſolution kept a ſecret in particular hands. Juncker informs us that it readily ſucceeds, if ſpirit of ſal-ammoniac, mixed with a due proportion of oil of ſpike or oil of turpentine, is uſed for the menſtruum.

COPARCENERS, otherwiſe called *Parceners*, ſuch as have equal portions in the inheritance of their anceſtor.

COPERNICAN-SYSTEM, or HYPOTHESIS, that ſyſtem of the world wherein the ſun is ſuppoſed at reſt in the center, and the planets, with the earth, to move in ellipſes round him.

The ſun and ſtars are here ſuppoſed at reſt, and that diurnal motion which they appear to have from eaſt to weſt, is imputed to the earth's motion from weſt to eaſt, round its axis. See the articles EARTH and PLANETS.

This ſyſtem was received of old by Philolaus Ariſtarchus, and Pythagoras, from which laſt it had the name of the Pythagoric ſyſtem: it was alſo held by Archimedes; but after him it became neglected, and even forgotten for many ages, till it was revived by Copernicus, about the year 1500, and from him named the Copernican ſyſtem. According to this hypotheſis, the ſun is ſuppoſed very near the center of gravity of the whole ſyſtem, and in the common focus of every one of the planetary orbits: next him Mercury performs his revolution around him; next Mercury is the orbit of Venus; and next to Venus, our earth, with its attendant or ſecondary, the moon, performing a joint courſe, and in their revolution meaſuring out the annual period. Next the earth is Mars, the firſt of the ſuperior planets; next him Jupiter, and laſt of all Saturn.

Theſe and the comets are the conſtituent parts of the ſolar ſyſtem, which is now received and approved as the only true one. See COMET, VENUS, MARS, &c.

COPERNICUS, the name of an aſtronomical inſtrument, invented by Mr. Whiſton, to exhibit the motion and phænomena of the planets, both primary and ſecondary. It is built upon the Copernican ſyſtem, and for that reaſon called by this name. The inventor of this inſtrument has wrote a treatiſe purpoſely to explain it.

COPTIC, or COPTIC LANGUAGE, that ſpoke by the Cophs, being the ancient language of the Egyptians, intermixed with the Greek, and the characters of it being thoſe of the Greek.

COPING, or COPPING *of a Wall*, in architecture, the top or covert of a wall, made ſloping to carry off the wet.

COPIVI, or *Balſam of* COPIVI. See *Balſam*.

COPPELLING, or CUPELLING, in chemiſtry, the putting metallic ſubſtances into a coppel, or covered veſſel, made of bone-aſhes, and ſet in a naked fire, to try what gold or ſilver they will afford.

COPPER, *Venus*, in natural hiſtory, a reddiſh metal, eaſily tarniſhing in a moiſt air, and contracting a green or a bluiſh green ruſt. It is the moſt elaſtic and ſonorous of all the metals, and the hardeſt of all but iron. It ſpreads with difficulty under the hammer, but may be extended to a great degree, drawn into fine wire, and beat into thin leaves. Its ſpecific gravity is near nine times greater than that of water. It requires for its fuſion a ſtrong white heat, greater than that in which gold and ſilver melt, though not ſo great as that which is requiſite for the fuſion of iron. When melted, it is remarkably impatient of moiſture: the contact of a little water occaſions the melted copper to be thrown about with violence, to the great danger of the by-ſtanders. It may nevertheleſs be granulated, like other metals, by cautiouſly pouring a very little at a time into water.

Copper is very rarely found pure in the earth. Of its ores there is a great variety, intermixed with different ſtony matters, generally abounding with ſulphur, ſometimes containing a little arſenic. Theſe ores are often of beautiful colours, blue, red, green, yellow, variegated like the rainbow or peacock's tail, moſt commonly green or blue: they are of all ores the moſt beautiful. The lapis lazuli, from which the precious blue pigment called ultramarine is prepared, is one of the ores of this metal. Some of them contain no metal but copper; many have an admixture of others; and there are few ores of other metals without ſome portion of copper in them. Copper is of all metals the moſt difficultly obtained pure from the ore; ſulphur adhering to it ſo ſtrongly, as not to be expelled without long calcination. When copper and iron are blended together in the ore, the copper cannot by any method as yet known, be ſeparated to advantage: a rich copper mine, at Lauterberg in the Hartz foreſt, lies on this account unworked. There are ores of copper in almoſt all parts of the world; in Spain, France, England, Norway, Saxony, Bohemia; but more particularly in Sweden, Hungary, and Tranſylvania. Japan affords a ſort of copper ſuperior to any met with in Europe. Copper is found alſo in a vitriolic ſtate, diſſolved in certain waters, as at Neuſol in Hungary: when iron is put into the water, the diſſolved copper ſeparates; a proportionable quantity of the iron being diſſolved in its place. The copper, extricated from the liquor adheres to the iron, and covers its ſurface with a bright cupreous cruſt: ſome have been ſo far impoſed on as to imagine the iron, by this means, actually tranſmuted into copper.

COPPER-PLATES *for Engraving.* They ought to be formed of the beſt copper, which can be diſtinguiſhed only by examining it with regard to the qualities requiſite to the conſtituting it good. Thoſe qualities are that it ſhould be very malleable, that is, capable of being ſpread with the hammer, or ſuffering itſelf to be rolled or drawn out to the niceſt or ſmalleſt pieces; that it ſhould nevertheleſs be firm, and reſiſt even to ſome degree of hardneſs, provided no ſhortneſs of grain or brittleneſs attend, but that it be perfectly ductile; and that it be free from any veins, ſpeck, or diſſimilar parts, but of an equal texture through the whole. The redneſs of copper is a preſumptive mark of its being good, but not an infallible one: for though it is in general a proof of the purity of the copper, yet it does not evince that the equalities may not be injured by too frequent fuſions, or the calcinations it may have undergone, if, as is frequently the caſe, it has before been employed in forming ſome utenſil.

The copper being choſen it muſt be fabricated into plates of the ſize demanded, the thickneſs of which may be in proportion of a line to plates that are a foot by nine inches. Theſe plates muſt then be well forged and planiſhed by a brazier, which ſhould be done cold: for by managing this operation well, the poroſity of the copper may be greatly removed, which is for the moſt obvious reaſons of great conſequence. When a plate is forged it ſhould be examined which ſide is the moſt even, and the leaſt flawed or cracked; and then the poliſhing may be thus performed.

Firſt wear out the marks of the planiſhing hammer, with rubbing with emery finely ground; and then, the plate being waſhed clean, bruſhing it over with refined aqua-fortis; which muſt be ſuffered to lie on till the ebullition it produces begins to decreaſe; and then waſhed off, by immerſing the plate in water; when it will be found to be brought to a better condition to take the burniſh with more certainty, than by the laborious uſe of ſtones and the coal. The plate being brought to this ſtate, the poliſhing muſt be finiſhed with a ſteel burniſher, with which it muſt be ſtrongly rubbed, till it muſt be as bright as a looking-glaſs in every part; but if, when the reſt is thus bright, ſome particular ſpots appear dull, or that any lines remain, ſuch faults ſhould be again worked with the burniſher, till the whole be uniformly ſhining.

COPPERAS, a name given to the factitious green vitriol. See *Vitriol.*

COPPICE, or COPSE, a little wood, conſiſting of under-woods, or ſuch as may be raiſed either by ſowing or planting.

When they are intended to be raiſed from maſt or ſeed, the ground is ploughed in the ſame manner as it is for corn: and either in autumn or in ſpring, good ſtore of ſuch maſts, nuts, ſeeds berries, &c. are to be ſown with the graſs, which crop is to be cut, and then the land laid for wood. They may alſo be planted about autumn, with young ſets, or plants, in rows about ten or fifteen feet diſtrance. If the copſes happen to grow thin, the beſt way of thickening them is to lay ſome of the branches or layers of the trees, that lie neareſt to the bare places, on the ground, or a little in the ground: this detained with a hook or two, and covered with freſh mould at a competent depth, will produce a multitude of ſuckers, and thicken a copſe ſpeedily.

COPULATION, the act, of generation, or the congreſs of the male and female, called alſo coition.

COPY, in a law ſenſe, ſignifies the tranſcript of any original writing, as the copy of a patent, charter, deed, &c.

COPY, among printers, the manuſcript, or original of a book, given to be printed.

COPY-HOLD, a tenure for which a tenant has nothing to ſhew but the copy of the rolls made by the ſteward of the lord's court.

It is called a baſe tenure, becauſe the tenant holds land at the will of the lord. However, it is not ſimply at the will of the lord, but according to the cuſtom of the manor by which ſuch eſtate is deſcendible, and the tenant's heirs may inherit it; and a copy-holder, ſo long as he does his ſervices, and does not break the cuſtom, cannot be ejected by the lord; and if he be, he ſhall have treſpaſs againſt him.

Some copyholds the tenants hold by the verge in ancient demeſne; and though held by copy, yet they are a kind of freehold: and other copyholds are ſuch as tenants hold by common tenure, called mere copyhold.

Copyhold inheritances have no collateral qualities, which do not concern the deſcent, as to make them aſſets to bind the heir, or whereof the wife may be endowed, &c. They are not extendible in execution, but are within the acts againſt bankrupts, and the ſtatutes of limitation.

COPY-HOLDER, one who is admitted tenant of lands or tenements within a manor, which, time out of mind, by uſe and cuſtom of the manor, have been demiſable and demiſed to ſuch as will take them in fee-ſimple or fee-tail, for life, years, or at will, according to the cuſtom of the manor by copy of court-roll; but is generally where the tenant hath ſuch eſtate either in fee or for three lives.

COR CAROLI, in aſtronomy, an extra-conſtellated ſtar in the northern hemiſphere, ſituated between the coma Berenices, and urſa major.

COR HYDRA, a fixed ſtar of the firſt magnitude, in the conſtellation of hydra.

COR LEONIS, or REGULUS, in aſtronomy, a fixed ſtar of the firſt magnitude, in the conſtellation leo.

COR MARINUM, in natural hiſtory, a name given to the heart-faſhioned echini-marini.

COR VENERIS, the name of a beautiful kind of heart ſhells, called alſo cor bovis.

CORAL, CORALLIUM, a hard, brittle, branched ſubſtance, reſembling the ſtalk of a plant; generally about the thickneſs of gooſe's quill; full of knots; ſometimes ſtraight, and ſometimes variouſly bent; both externally and internally of a deep bright red colour. It is found adhering to rocks and other bodies in the ſea, particularly in the Mediterranean; covered with a ſoft fungous bark, in which is a great number of cells curiouſly divided, containing a milky juice, with apertures on the ſurface: this cortical part is ſeparated while freſh and ſoft. It has been generally referred to the vegetable kingdom; but it is more probably the work and the neſt of little animals.

Red coral is uſed as an abſorbent of acid humours in the firſt paſſages; but that it has any virtues diſtinct from thoſe of the other calcareous abſorbents, or that it is ſuperior in abſorbent power to the cheaper teſtaceous bodies, there are no grounds to ſuſpect.

Artificial CORAL is made of cinnabar well beaten; a layer whereof is applied on a piece of wood well dried and poliſhed, being firſt moiſtened with ſize: the whole is then again poliſhed, and for varniſh rub it over with the white of an egg.

CORAL-TREE, or CORAL-WOOD, in botany, the ſame with the coralloden-dron.

CORALINE, CORALLINA, in botany, is a genus of ſubmarine plants, conſiſting of ſtalks and branches often beautifully ramified, and compoſed of joints of an oblong figure inſerted into one another. It is frequently found on the Engliſh coaſts, and what we uſe is in general of our own produce, though there is ſome of it brought from France and Holland. It is to be choſen freſh, of a ſtrong ſmell, and greeniſh or reddiſh colour. The ancients extol much the virtues of coralline; at preſent, however, we uſe it only againſt worms, and it is generally mixed with worm-ſeed, ſalt of ſteel, and other of the known anthelminthics.

* CORAM (Captain THOMAS) a gentleman remarkably diſtinguiſhed by his humanity, was born in 1668, and ſpent the early part of his life in the ſtation of maſter of a veſſel trading to our colonies. Afterwards reſiding in the eaſtern part of the metropolis, among ſeafaring people, where buſineſs often obliged him to come early into the city and return late, he frequently ſaw young children expoſed in the ſtreets, through the indigence or cruelty of their parents. This excited his compaſſion, and induced him to project the foundation of an hoſpital for foundlings. In this humane deſign he laboured with indefatigable diligence for ſeventeen years, and by his application procured a number of the nobility and gentry to patronize and carry the ſcheme into execution, and at length obtained the royal charter for it. He was alſo highly inſtrumental in promoting the trade of America, by procuring a bounty upon naval ſtores imported from our colonies. In ſhort, a great part of his life was ſpent in ſerving the public, entirely diſregarding his private intereſt. He died the 29th of March 1751, in the eighty-fourth year of his age, and was interred, by his own requeſt, in the chapel of the Foundling-hoſpital.

CORANA, a kind of phaſeolus, or kidney-bean, the down of whoſe pod is the common cow-itch.

CORBEL, in architecture, the repreſentation of a baſket, ſometimes uſed to ſignify the vaſe of a tambour of the Corinthian column.

CORCHORUS, in botany, a genus of plants, denominated in Engliſh Jews-ſallad.

CORD, or CHORD, ſeveral threads, cabled or twiſted together by means of a wheel. See *Rope*.

CORD *of St. Francis*, a ſort of rope, adorned with knots, wore by the brothers of the fraternity of St. Francis.

CORD *of Wood*, a certain quantity of wood for burning, ſo called becauſe formerly meaſured with a cord. The dimenſions of a ſtatute cord of wood are eight feet long, four feet high, and four feet broad.

CORDATED, an appellation frequently given by naturaliſts to things ſomewhat reſembling a heart.

CORDILIER, a Franciſcan, or religious of the order of St. Francis. The Cordeliers are enjoined to live in common: thoſe who are admitted into the order, are firſt to ſell all they have and give it to the poor. The prieſts are to faſt from the feaſt of all Saints till the Nativity.

CORDIAL, in medicine, whatever raiſes the ſpirits, and gives them a ſudden ſtrength and chearfulneſs. To underſtand the operation of this upon a human body, it is neceſſary to conſider, that a langour, or faintneſs, muſt either be the conſequence of too much exerciſe, too long watching, or too great a hurry of the animal functions, as in ſome diſtempers; all which do ſo far diſſipate the nervous fluid, or animal ſpirits, as that the ſolids cannot repeat, with wonted vigour, their neceſſary motions: or ſuch depreſſions muſt ariſe from the obſtruction of ſome natural evacuation, and generally that of perſpiration; or from external cold, which lays a load upon the conſtitution. In both theſe caſes the manner in which a cordial acts is the ſame, ſince it muſt produce its effects by adding to the ſpringineſs and force of the fibres; and as this change is moſt remarkable from ſpirituous liquors, it may be of uſe to examine how they come to obtain ſuch a denomination: and this muſt ariſe from their ſubtility and fineneſs of parts; ſo that the more ſpirituous any thing is that enters the ſtomach, the ſooner one feels its cordial effects: for that increaſe of vigour which a man obtains from common food, though the moſt natural and durable, is not immediately obtained in ſuch a degree, as to get the appellation of cordial, ſince it muſt paſs through ſeveral comminutions before it arrive to ſuch a fineneſs as to be diſperſed to the nerves; whereas a ſpirituous ſubſtance enters into the nerves as ſoon as it touches them, whereby their vibrations are invigorated, and all ſenſe of faintneſs removed. In like manner volatiles, the effluvia of flowers, fruits, and all things deemed cordials, operate on the organs of ſmelling.

CORDWAINERS, a term whereby ſhoemakers are denominated in the ſtatutes, from *cordonnier*, *Fr.*

CORDYLUS, a ſpecies of lizard, with five toes on each foot, and a taper tail, covered with denticulated ſquamæ, or ſcales.

CORED HERRING, thoſe caught in autumn on the coaſt near Yarmouth; which being rolled in ſalt, are afterwards brought on ſhore to be made red Herrings.

CORIANDER, in botany, an umbelliferous plant, with finely divided leaves; producing pale, yellowiſh, or browniſh, ſtriated, hemiſpherical ſeeds, which are joined by the flat ſides, two together. It is annual, a native of Italy, and cultivated in ſome parts of Englnad. The leaves of coriander have a ſtrong ſmell, ſomewhat of the aromatic kind, but not a little diſagreeable. The ſeeds alſo have, when freſh, a very unpleaſant flavour, which by drying is altered, and becomes tolerably grateful: their taſte, in this dry ſtate, is moderately warm and ſlightly pungent. The dried ſeeds are ſometimes employed as a ſtomachic and carminative, though leſs frequently than the other warm ſeeds.

CORIDOR, or CORRIDOR, in fortification. See *Covert-Way*.

CORINTHIAN, ſomething belonging to Corinth: as Corinthian braſs, Corinthian order, &c.

CORINTHIAN ORDER, in architecture, the fourth order of architecture, according to Scammozzi; but Mr. Le Clerc makes it the fifth, being the moſt noble, rich, and delicate of all the other five.

The Corinthian order has ſeveral characters by which it is diſtinguiſhed from the reſt. Its capital is adorned with two rows of leaves, between which ariſe little ſtalks, or caulicoles, of which the volutes are formed, which ſupports the abacus, and are ſixteen in number. It has no ovolo, nor even abacus, properly ſpeaking; for the member that goes by that name, is quite different from the abacus of the other orders, being cut with a ſweep, in the middle of which is carved a roſe, or other ornament.

Moſt modern architects paſs by Vitruvius's Corinthian order, and follow that of the ancient buildings; and ſelect from them according to their ſeveral taſtes: ſo that the modern Corinthian is a kind of compoſite, differing from many of the ancient buildings, and much more from Vitruvius. Vignola and Mr. Le Clerc made the Corinthian order twenty modules in height, yet Serlio makes it but eighteen; and M. Perrault eighteen two thirds, retrenching ſomething from nineteen of Vitruvius. M. Perrault makes the height of the ſhaft leſs than that of the Ionic, by reaſon of the exceſs of its capital.

CORK, or CORK-TREE, *Suber*, in botany, makes a diſtinct genus of trees, according to Tournefort; but is comprehended under the quercus by Linnæus. In order to peel off the bark, which is the only part that conſtitutes the ſubſtance known by the name of cork, they make an inciſion round both the top and root of the tree, and another longitudinally; and when it is thus got off, they unwarp it before the fire, and preſs it even with weights. This they do once in two or three years, without any prejudice to the tree; provided, however, it be done in a dry ſeaſon, as rainy weather is accounted extremely prejudicial. The cork ſhould be choſen in fine boards, all of a piece, not full of knots or chinks, of a moderate thickneſs, yellowiſh without and within, and that which cuts even. Its uſe is well known: in medicine it is of ſervice to ſtop bleeding, being reduced to powder, or put into ſome aſtringent liquor: burned and mixed with the unguentum populneum, it is very proper for the piles. The Spaniards burn cork into an extraordinary fine black, called Spaniſh black, which is uſed for ſeveral ſorts of work.

CORK, or CORKING *of a Saddle*, the pieces to which the bolſters are made faſt; ſo called as having formerly been made of cork.

CORMORANT, in ornithology, the Engliſh name of a ſpecies of pelican, with fourteen long feathers in the tail, and the under part of the body whitiſh: it is a ſea-fowl, almoſt equal to a gooſe in ſize, and feeds on fiſh.

CORN, the grain or ſeeds of plants, ſeparated from the ſpica, or ear, and uſed for making bread. There are ſeveral ſpecies of corn, ſuch as wheat, rye and barley, millet and rice, oats, maize and lentils, peaſe, and a number of other kinds. See *Wheat*, *Rye*, *Barley*, &c.

Corn is very different from fruits with reſpect to the manner of its preſervation, and is capable of being preſerved in public granaries, for preſſing occaſions, and of being kept for ſeveral centuries. See *Granary*.

CORN-MILL, a water or wind engine for grinding of corn. See *Mill* and *Grinding*.

CORN, in medicine and ſurgery, a hard tubercle, like a flat wart, growing about the feet, eſpecially upon the joints of the toes. This diſorder is not unjuſtly attributed to the wearing of too ſtrait or narrow-toed ſhoes, which never fail to produce theſe tubercles.

Various methods are uſed for removing theſe calloſities of the ſkin and cuticle; ſome by knife, and others by application of emollient and cauſtic or eroding medicines; but which way ſoever they are removed, it is certainly the beſt to let their hard ſubſtance be firſt ſufficiently mollified; and this may be obtained by frequently macerating them for a conſiderable time in warm water, and afterwards paring off their uppermoſt ſurface with a penknife: or if this does not ſuffice, let a plaſter of green wax, gum ammoniac de ſaphon, &c. or a leaf of houſe-leek be applied and renewed every day; when theſe applications have been continued for ſome time, peel them away with your nails, or ſcrape them with a ſcalpel, but with great caution, to avoid injuring any of the ſubjacent tendons of the extenſor muſcle, which might occaſion violent pains, inflammation, convulſions, a gangrene, and even death; all which have alſo been frequently the conſequences of cauſtics penetrating to thoſe parts.

CORNEA TUNICA, in anatomy, the ſecond coat of the eye, ſo called from its ſubſtance, which reſembles the horn of a lanthorn. See *Eye.*

The cornea is convex, pellucid, and diviſible into various lamellæ. It is ſituated in the fore-part of the eye, and ſurrounded by the ſclerotica. It has a moſt exquiſite ſenſe, to the end that the tears, upon the leaſt pain, may be ſqueezed out of the lachyrymal gland, to waſh off any filth, which, by ſticking to the cornea, might render it dim.

CORNEL-TREE, *Cornus,* in botany. See *Cornus.*

CORNELIAN, *Sarda.* See *Carnelian.*

CORNER, *Angulus,* in a general ſenſe, the ſame with angle. See *Angle.*

CORNET, in the military art, the third commiſſion officer in a troop of horſe or dragoons, he commands in the lieutenant's abſence; his principal duty being to carry the ſtandard near the middle of the firſt rank of the ſquadron.

CORNICHE, CORNISH, or CORNICE, in architecture, the uppermoſt member of the entablature of a column, as that which crowns the order. The corniche is the third grand diviſion of the trabeation, commencing with the frieze, and ending with the cimatium. The corniche is different in different orders, there being as many kinds of corniches as there are different orders of columns. It is moſt plain in the Tuſcan order. Vignola makes it conſiſt of an ovum or quarter-round, an aſtragal or baguette, the reglet or fillet, the larmier, and the talon.

In the Ionic, the members are in moſt reſpects the ſame as in the Doric, except that they are frequently enriched with carvings, and have always dentils. See *Ionic Order.*

In the Doric, Vignola makes the capitals of the triglyphs of the frieze, with their bandeletters, a talon, mutules or dentiles, a larmier with its guttæ underneath, a talon, fillet cavetto, and reglet. See *Doric Order.*

The Corinthian corniche is the richeſt, and is diſtinguiſhed by having both modillions and dentils. See *Corinthian Order,* and *Modillion.*

In the Compoſite there are dentils, its mouldings carved, and there are channels under the ſoffit. See *Compoſite Order.*

CORNICHE is alſo uſed, in general, for all little projectures in maſonry or joinery, even where there are no columns, as the corniche of a chimney, beaufet, &c.

Cantaliver CORNICHE, a term uſed by workmen for a corniche that has cantalivers underneath. See *Cantaliver.*

Coving-CORNICHE, that which has a great caſement or hollow in it, uſually lathed and plaſtered upon compaſs-ſpretchets, or brackets.

Modillion CORNICHE, one with modillions under it. See the article *Modillion.*

CORNICULATE, or CORNICULATED FLOWER, one with a ſharp-pointed appendage, reſembling, in ſome degree a cock's ſpur.

CORNU AMMONIS, or HAMMONIS, in natural hiſtory, a genus of foſſile ſhells, called ſerpent-ſtones, or ſnake-ſtones, by the vulgar. They are found of all ſizes, from the breadth of a ſix-pence, to more than two feet in diameter.

CORNUCOPIA, or HORN *of Plenty,* among painters, &c. is repreſented under the figure of a large horn, out of which iſſues fruits, flowers, &c. Upon medals the cornucopia is given to all deities, genii, and heroes, to mark the fecundity and abundance of all the wealth procured by the goodneſs of the former, or the care and valour of the latter.

CORNUCOPIÆ, in botany, a genus of plants, the flower of which is univalvular; there is no pericarpium, but the corolla incloſes a ſingle turbinated ſeed, convex on one ſide, and plane on the other.

CORNUS, the cornel tree, in botany, a genus of plants, the fruit of which is cooling, drying, and aſtringent, ſtrengthens the ſtomach, ſtops all kinds of fluxes and looſeneſs, and is good in fevers, eſpecially if attended with a diarrhœa.

* CORNWALL, the moſt weſterly county of England, from whence the prince of Wales takes the title of duke. It contains 161 pariſhes, 27 market-towns, and ſends 44 members to parliament.

COROLLA, among botaniſts, the moſt conſpicuous part of a flower, ſurrounding the organs of generation, and compoſed of one or more flower-leaves, moſt commonly called petals, to diſtinguiſh them from the leaves of the plant: according as there is one, two, or three of theſe petals, the corolla is ſaid to be monopetalous, dipetalous, tripetalous, &c. See *Flower, Petal, &c.*

COROLLARY, an uſeful conſequence drawn from ſomething already advanced or demonſtrated.

COROLLISTS, *Corolliſtæ*, an appellation given by Linnæus to thoſe botaniſts who have arranged plants under diſtinct claſſes, according to the different form of their corollæ or flowers. See *Botany*.

CORONA, among anatomiſts, denotes that edge of the glans penis where the preputium begins.

CORONA, among botaniſts, expreſſes any thing growing on the head of a ſeed.

CORONA BOREALIS, the northern crown or garland, in aſtronomy, a conſtellation of the northern hemiſphere, whoſe ſtars in Ptolemy's catalogue are eight, in Tycho's as many, and in Mr. Flamſtead's twenty-one.

CORONAL, *Coronalis*, in anatomy, the firſt ſuture of the ſkull. See *Suture* and *Skull*. This ſuture reaches tranſverſely from the one temple to the other, and joins the os frontis with the oſſa parietalia.

CORONARY VESSELS, *Vaſa Coronaria*, in anatomy, certain veſſels which furniſh the ſubſtance of the heart with blood.

CORONARY ARTERIES, two arteries ſpringing out of the aorta, before it leaves the pericardium.

CORONARY VEIN, a vein diffuſed over the exterior ſurface of the heart, terminating in the vena cava, whither it conveys the remains of the blood brought by the coronary arteries.

CORONER, an ancient officer of the kingdom. The office of coroners eſpecially concerns the pleas of the crown; and they are conſervators of the peace in the county where elected, being uſually two for each county. Their authority is judicial and miniſterial: judicial, where a perſon comes to a violent death; to take and enter appeals of murder, pronounce judgment on outlawries, &c. and to enquire into the lands, goods, and eſcape of murderers, treaſure-trove, wreck of the ſea, deodands, &c. The miniſterial power is, when coroners execute the king's writs, on exception taken to the ſheriff, as being party in a ſuit, of kin to either of the parties, or on the default of the ſheriff, &c. The authority of the coroner does not terminate on the demiſe of the king, as that of judges, &c. does, who act by the king's commiſſion. On default of ſheriffs, coroners are to impanel juries, and to return iſſues on juries not appearing, &c.

CORONET. See *Crown*.

CORONET, or CRONET *of a horſe*, the loweſt part of the piſtern, which runs round the coffin, and is diſtinguiſhed by the hair joining and covering the upper part of the hoof.

CORPORA OLIVARIA, two protuberances of the mudulla oblongata. See *Brain*.

CORPORA PYRAMIDALIA, two protuberances of the under part of the cerebellum.

CORPORA STRIATA, two protuberances in the lateral ventricles in the brain. See *Brain*.

CORPORAL, an officer under a ſerjeant, in a company of foot, who has charge over one of the diviſions, places and relieves centinels, and keeps good order in the corps de garde: he alſo receives the word from the inferior rounds, which paſſes by his corps de garde: there are generally three corporals in each company.

CORPORATION, a body politic, or incorporate, ſo called, becauſe the perſons or members are joined into one body, and are qualified to take and grant, &c. Corporations may be eſtabliſhed three different ways, viz. by preſcription, letters patent, or act of parliament; but are moſt commonly eſtabliſhed by patent or charter.

CORPOREAL, thoſe qualities which denominate a body.

CORPS DE GARDE, a poſt in an army, ſometimes under covert, ſometimes in the open air, to receive a number of ſoldiers, who are relieved from time to time, and are to watch in their turns, for the ſecurity of ſome more conſiderable poſt.

Corps de garde is generally uſed for the men who watch in this poſt.

CORPS, in architecture, a term to ſignify any part that projects or advances beyond the nakedneſs of a wall, ſerving as a ground for ſome decoration, or the like.

CORPULENCY, in medicine, the ſtate of a perſon too much loaded with fleſh or fat.

CORPUS CALLOSUM, a medullary part of the brain, which covers the whole lateral ventricles. See *Brain*.

CORPUS CAVERNOSUM, a cavernous ſubſtance ſurrounding the vagina, which ſwells in the time of coition.

CORPUS PAMPINIFORME, a body formed a little above the teſticles, by the diviſion and re-union of the ſpermatic veins.

CORPUS CHRISTI, a feſtival of the church, kept on the next Thurſday after Trinity-Sunday, inſtituted in honour of the euchariſt; to which one of the colleges in Oxford is dedicated.

CORPUSCLE, in phyſics, a minute particle, or phyſical atom, being ſuch as compoſe a natural body.

CORPUSCULAR PHILOSOPHY, that way of philoſophiſing which endeavours to explain things, and to account for the phænomena of nature by the motion, figure, reſt, poſition, &c. of the corpuſcles, or the minute particles of matter, &c.

CORRECTION, in printing, the pointing out, or diſcovering the faults of a printed ſheet, that they may be amended by the compoſitor before it is printed off. See *Printing*.

The corrections are placed on the margin of every page, oppoſite the line wherein the faults are found; and there are different characters uſed to expreſs different corrections: thus *d* is put for *dele*, to intimate that ſomething, as a point, letter, word, *&c.* daſhed in that line is to be taken out. If any thing is to be inſerted, the place is to be marked thus ∧, and the thing to be inſerted added in the margin. When there are two or more corrections in the ſame line, then they are all ſeparated in the margin by little bars thus |. If a ſpace be omitted, its place is marked with a caret. When any thing is inverted, it is expreſſed in the margin thus C. When any thing is to be tranſpoſed, it is directed thus. *Extraordinary ſcarce ever fail of attainments exciting envy*, for *Extraordinary attainments ſcarce ever fail of exciting envy*, and in the margin is added *tr.* If Italic characters are to be changed for Roman, or *vice verſa*, a line is drawn thus—under the letters, and *rom.* or *ital.* is written in the margin. If a ſpace, or an m or n quadrat, ſtick up, and print black, it is marked in the margin with a daſh, thus ǀ. If a word, ſentence, or paragraph is entirely omitted, the place is marked with a caret, and in the margin is put the word *out*. If the letters of a word ſtand too far aſunder, a line is drawn under them, and in the margin is put a crooked line or hook, thus ◡. There are many other marks uſed in correcting, as *cap.* for capital, *l. c.* for lower-caſe, *&c.*

CORRECTION, in pharmacy, the adding ſome ingredient to a compoſition, in order to check or moderate the violence of the operation.

CORRECTOR, in general, denotes ſomething that mends the faults or bad qualities of others.

CORRECTOR, in medicine and pharmacy, an ingredient in a compoſition, which guards againſt or abates the force of another.

CORRELATIVE, ſomething oppoſed to another in a certain relation. Thus, father and ſon are correlatives. Light and darkneſs, motion and reſt, are correlative and oppoſite terms.

CORROSION, the action of gnawing away, by degrees, the continuity of the parts of bodies. Acids corrode moſt natural bodies.

CORROSION, in chemiſtry, an action performed on bodies, by means of proper menſtruums, that produce new combinations, and a change of their form, without converting them to fluidity. See *Menſtruum*.

CORROSIVES, in ſurgery, medicines which corrode whatever part of the body they are applied to: ſuch are burnt-alum, white precipitate of mercury, white vitriol, red precipitate of mercury, butter of antimony, lapis infernalis, &c.

CORRUGATOR, in anatomy, a muſcle which ariſes fleſhy from the proceſs of the os frontis, next the inner or great angle of the orbit, above the joining of the os naſi and the ſuperior proceſs of the os maxillare with this bone: from thence it runs obliquely outwards and upwards, and is inſerted into the fleſhy part of the occipito-frontalis, ſome of its fibrillæ paſſing through into the ſkin, a little higher than the middle region of the eye-brows.

CORRUPTION, the deſtruction, extinction, or, at leaſt, ceſſation for a time, of the proper mode of exiſtence of any natural body. See *Putrefaction*.

Whenever any body loſes all or any of thoſe accidents, which are eſſentially neceſſary to the conſtituting of ſuch a particular kind, it is then ſaid to be corrupted, or deſtroyed, and loſes its former denomination: but nothing can be deſtroyed of its ſubſtance, or materiality; for as in generation, nothing of matter is produced that did not before exiſt, ſo in corruption, nothing more is loſt beſides that particular modification which was its form, and conſtituted it of ſuch a ſpecies.

CORRUPTION *of Blood*, in law, an infection accruing to a man's ſtate, attainted of felony and treaſon, and to his iſſue; for as he loſes all to the prince, &c. his iſſue cannot be heirs to him, or to any other anceſtor by him: and if he were noble, his heirs are rendered ignoble.

CORSAIR, a pirate, or perſon who ſcours the ſea for plunder, with an armed veſſel, without commiſſion from any prince or power. A corſair differs from a privateer, in that the latter acts under a commiſſion, and only attacks the veſſels of thoſe at war with the ſtate whence he had his commiſſion.

CORTEX *Peruvianus*. See *Quinquina*.

CORTEX *Winteranus*. See *Winteranus Cortex*.

CORTICAL, ſomething conſiſting of, or reſembling bark. Thus the cortical part of the brain is that which inveſts the internal or medullary part, like the bark of a tree. See *Brain*.

CORVUS, the raven, in ornithology, a genus of birds of the order of the picæ, the diſtinguiſhing character of which is, that the beak is of a convex and cultrated figure, the mandibles nearly equal, and the baſe beſet with hairs.

CORVUS, the raven, in aſtronomy, a conſtellation of the ſouthern hemiſphere, conſiſting of ſeven ſtars, according to the catalogues of Ptolomy and Ticho: but of ten, by the Britannic catalogue.

CORYMBYFEROUS *Plants*, in botany, ſuch as have a compound diſcous flower, but their ſeeds deſtitute of down. They bear their flowers in cluſters, and ſpreading round in the form of an umbrella. Of this kind are the common marygold, common daiſy, camomile, &c.

CORYMBUS, among botaniſts, cluſters of berries, as thoſe of ivy, &c. It is alſo uſed by the modern botaniſts, to ſignify a compound diſcous flower; which does not fly away in down.

CO-SECANT, in geometry, the ſecant of the complement of any given arch to ninety-degrees.

CO-SINE, in trigonometry, the ſine of the complement of any given arch to ninety-degrees.

COSMETIC, in medicine, a preparation for ſoftening and whitening the ſkin.

COSMICAL, in aſtronomy, one of the poetical riſings or ſettings of a ſtar; which is ſaid to riſe coſmically, when it riſes with the ſun, or with that point of the ecliptic, in which the ſun is at that time; and the coſmical ſetting of a ſtar, is when it ſets at ſun riſing.

COSMOGRAPHY, a deſcription of the ſeveral parts of the viſible world; conſiſting of two parts, aſtronomy and geography.

COSMOPOLITE, a citizen of the world, or one who has no fixed reſidence.

COSSET, among farmers, implies, a colt, calf, lamb, &c. brought up by hand, without the dam.

COSTAL, an epithet applied by anatomiſts to ſeveral parts belonging to the ſides.

COSTIVENESS, among phyſicians, a preternatural detention of the fæces, with an unuſual dryneſs, and hardneſs thereof. The moſt effectual method of removing obſtructions of this kind, are gentle purgatives; ſuch as the purging ſalts, manna, lenitive electuary, and emollient clyſters.

COSTMARY, a ſpecies of tanſy. See *Tanacetum*.

COSTS, in law, the expences of a ſuit recovered by the plaintiff together with damages.

COSTUME, a rule or precept in painting, by which the artiſt is enjoined to make every perſon and thing ſuſtain its proper character, and not only obſerve the ſtory, but the circumſtances, the ſcene of action, the country or place, and take care that the habits, arms, manners, proportions, and the like, exactly correſpond.

COSTUS, in the materia medica, a root brought from the Eaſt-Indies, about the ſize of the finger, of a pale greyiſh, or whitiſh colour on the outſide, and yellow within. At preſent, one ſort only is met with in the ſhops, and that but ſeldom. It has been recommended as a ſtomachic uterine, diaphoretic, and diuretic.

CO-TANGENT, in geometry, the tangent of the complement of the given arch to ninety-degrees.

COTICE, or COTISE, in heraldry, the fourth part of the bend; and, with us, is ſeldom, if ever, borne but in couples, with a bend between them.

COTINUS, in botany. See *Sumach.*

COTTAGE, a ſmall houſe, without lands belonging to it.

COTTON, in commerce, a ſoft downy ſubſtance, growing on a tree called goſſypium by botaniſts. See *Goſſypium.* Cotton is ſeparated from the ſeeds of the plant by a mill, and then ſpun and prepared for all ſorts of fine works, as ſtockings, waiſtcoats, &c. With it they likewiſe make muſlin, and ſometimes it is mixed with wool, ſometimes with ſilk, and even with gold itſelf. The fineſt ſort comes from Bengal and the coaſt of Coromandel. Cotton makes a very conſiderable article in commerce, and is diſtinguiſhed into cotton-wool and cotton-thread. The firſt is brought chiefly from Cyprus, St. John d'Acre, and Smyrna: the moſt eſteemed is white, long, and ſoft. Thoſe who buy it in bales ſhould ſee that it has not been wet, moiſture being very prejudicial to it. Of cotton thread, that of Damas, called cotton d'once, and that of Jeruſalem, called bazas, are the moſt eſteemed; as alſo that of the Antilles iſlands. It is to be choſen white, fine, very dry, and evenly ſpun. Cotton of Siam, is a kind of ſilky cotton in the Antilles, ſo called becauſe the grain was brought from Siam. It is of an extraordinary fineneſs, even ſurpaſſing ſilk in ſoftneſs. They make hoſe of it there preferable to ſilk ones, for their luſtre and beauty. They ſell from ten to twelve and fifteen crowns a pair, but there are very few made, unleſs for curioſity.

In the Swediſh Tranſactions for the year 1747, a method is given of preparing flax, ſo as to reſemble cotton in whiteneſs and ſoftneſs, as well as in coherency: for this purpoſe, a little ſea-water is directed to be put into an iron pot or an untinned copper-kettle, and a mixture of equal parts of birch aſhes and quick-lime ſtrewed upon it: a ſmall bundle of flax is to be opened and ſpread upon the ſurface, and covered with more of the mixture, and the ſtratification continued till the veſſel is ſufficiently filled. The whole is then to be boiled with ſea-water for ten hours, freſh quantities of water being occaſionally ſupplied, in proportion to the evaporation, that the matter may never become dry. The boiled flax to be immediately waſhed in the ſea, by a little at a time, in a baſket, with a ſmooth ſtick: when grown cold enough to be borne by the hands, it muſt be well rubbed, waſhed with ſoap, laid to bleach, and turned and watered every day. Repetitions of the waſhing with ſoap expedite the bleaching; after which, the flax is to be beat, and again well waſhed: when dry, it is to be worked and carded in the ſame manner as common cotton, and preſſed betwixt two boards for twice twenty-four hours. It is now fully prepared and fit for uſe: it loſes in this proceſs near one half of its weight, which is abundantly compenſated by the improvement made in its quality.

Lavender COTTON. See *Santolina.*

Philoſophic COTTON, a term given to the flowers of zinc, on account of their white colour, and reſemblance to cotton.

Silk COTTON, in botany, the ſame with the xylon. See *Xylon.*

COTYLA, in anatomy, any deep cavity in a bone, in which any other bone is articulated: but it is generally uſed to expreſs the acetabulum, or cavity which receives the head of the thigh-bone: It alſo imports a deep ſinus ſurrounded with large lips.

COTYLEDONES, in anatomy, certain glandular bodies, adhering to the chorion of ſome animals: but no ſuch ſubſtances are obſervable in human bodies, the placenta in the womb ſupplying the place thereof in women. See *Placenta.*

COUCH, in painting, a phraſe uſed for each lay or impreſſion of colour, either in oil or water, wherewith the painter covers his canvas, wainſcot, or other matter to be painted. This word is alſo uſed for a lay or impreſſion on any thing, to make it more firm and conſiſtent, or to ſcreen it from the weather. Thus, paintings are covered with a couch of varniſh; a canvas to be painted muſt have two couches of ſize, before the colours are laid on; two or three couches of white lead are laid on wood, before the gold is applied. The leather-gilders lay a couch of water and whites of eggs on the leather, before they apply the gold or ſilver-leaf. The gold wire-drawers alſo uſe the word couch for the gold or ſilver leaf wherewith they cover the maſs to be gilded or ſilvered. The gilders uſe the term couch, for the quantity of gold and ſilver leaves applied on the metals in gilding and ſilvering.

COUCH, or WET-COUCH, in malt-making. See *Malt-making.*

COUCHANT, in heraldry, is underſtood of a lion, or other beaſt, when lying down, but with his head raiſed, which diſtinguiſhes the poſture of couchant from dormant, wherein he is ſuppoſed quite ſtretched out and aſleep.

COUCHE, in heraldry, ſignifies any thing lying along: thus, chevron couche, is a chevron lying ſide-ways, with the two ends on one ſide of the ſhield, which ſhould properly reſt on the baſe.

COUCHING *of a Cataract*, in ſurgery, one of the two chief methods of curing a cataract, by couching with the needle. See *Cataract*.

When recourſe muſt be had to couching, the method of treating it is as follows: Having placed the patient in a convenient light and poſture, let the other eye be covered to prevent its rolling: then let the ſuperior eye-lid of that eye affected be lifted up, and the inferior one depreſſed: this done, ſtrike the needle through the tunica conjunctiva, ſomething leſs than one tenth of an inch from the cornea, even with the middle of the pupil, into the poſterior chamber; and gently endeavour to depreſs the cataract with the flat ſurface of it. If after it is diſlodged it riſes again, it muſt again and again be puſhed down. If it is membranous, after the diſcharge of the fluid, the pellicle muſt be the more broken and depreſſed. If it is uniformly fluid, or exceedingly elaſtic, they ſhould not endanger an inflammation by a vain attempt to ſucceed.

After couching, it is thought proper immediately to defend the eye with a compreſs dipt in ſome collyrium, ſecured by a handkerchief, that the retina may not be injured by a too ſtrong action of the light; and leſt, by the patient's ſtraining his eye too ſoon, the cataract be elevated again. It will alſo be convenient to bleed the patient a few hours after the operation. With regard to the ſubſequent dreſſings, it will be neceſſary to repeat the former four or five times a day.

COVENANT, a compact or agreement between two or more perſons to perform ſomething.

* COVENTRY, a city in Warwickſhire, ſituate 92 miles north-weſt of London, and ten miles north of Warwick. It is the ſee of a biſhop, in conjunction with Lichfield, and ſends two members to parliament. Its chief trade is in the ribbon manufacture. It alſo gives name and title to the earls of Coventry. It is a corporation governed by a mayor, comprehending ten wards, three pariſh churches, a conſiderable grammar ſchool, and exhibitions for both univerſities; beſides ſeveral hoſpitals.

COVERING, or ROOFING, in architecture. See *Roof*.

CO-VERSED SINE, in geometry, the remaining part of the diameter of a circle, after the verſed ſine is taken from it. See *Verſed Sine*.

COVERT-WAY, or CORRIDOR, in fortification, a ſpace of ground, level with the field, on the edge of the ditch, three or four fathoms broad, ranging quite round the half moons, and other works toward the country. It has a parapet raiſed on a level, together with its banquets and glacis. The greateſt effort in ſieges, is to make a lodgment on the covert-way, becauſe the beſieged uſually palliſade it along the middle, and undermine it on all ſides.

COVERTURE, in law, the ſtate and condition of a married woman, who is under the power of her huſband, and therefore called *feme covert*, and diſabled to contract with any perſon to the detriment of herſelf or huſband, without his conſent. If the huſband alien the wife's lands, during the marriage, ſhe cannot gainſay it while he lives; ſo that every thing belonging to the wife is in the power of the huſband, inſomuch that ſhe is ſaid to have no power over her own perſon, but is alſo in that ſenſe, *ſub poteſtate viri.*

COUGH, *Tuſſis*, in medicine a convulſive motion of the diaphragm, muſcles of the larnyx, thorax, and abdomen, violently ſhaking, and expelling the air that was drawn into the lungs by inſpiration.

COVIN, among lawyers, a deceitful compact between two or more perſons to deceive or prejudice another.

COULTER, in huſbandry, an iron inſtrument fixed in the beam of a plough, and ſerving to cut the edge of each furrow. See *Plough*.

COUNCIL, or COUNSEL, in a general ſenſe, an aſſembly of perſons to concert meaſures relating to the ſtate.

Privy COUNCIL, the primum mobile of the civil government of Great Britain, bearing part of that great weight in the government which otherwiſe would be heavy upon the king. It is compoſed of eminent perſons, the number at the ſovereign's pleaſure, who are bound by oath to adviſe the king to the beſt of their judgment, with all the fidelity and ſecrecy that becomes their ſtation. The king may declare to, or conceal from, his privy council whatever he thinks fit, and has a ſelect council out of their number commonly called the cabinet council, with whom his majeſty determines ſuch matters as are moſt important, and require the utmoſt ſecrecy. All proclamations from the king and the privy council, ought to be grounded on law, otherwiſe they are not binding to the ſubject. Privy-counſellors, have precedence of all the knights and younger ſons of barons and viſcounts, and are ſtiled right honourable.

COUNCIL *of War*, an aſſembly of the principal officers of an army or fleet, occaſionally called by the general or admiral to concert meaſures for their conduct with regard to ſieges, &c.

COUNSELLOR, in a general ſenſe, a perſon who adviſes another: thus we ſay, a counſellor at law, a privy counſellor, &c.

COUNSELLOR, *at law*, a perſon who is a barriſter retained by a client to plead his cauſe in a public court of judicature.

COUNT, *Comes*, a nobleman who poſſeſſes a domain erected into a county. The dignity is a medium between that of a duke and a baron. See *Earl*.

COUNT, in law, the original declaration of complaint in a real action, as a declaration is in a perſonal one.

COUNTER, a term which enters into the compoſition of divers words of our language, and generally implies oppoſition; but when applied to deeds, means an exact copy kept by the contrary party, and ſometimes ſigned by both parties.

COUNTER-APPROACHES, in fortification, lines and trenches made by the beſieged, in order to attack the works of the beſiegers.

COUNTER-BATTERY, a battery raiſed to play upon another to diſmount the guns.

COUNTER-BOND, a bond of indemnification given to one who has given his bond as a ſecurity for another's payment of a debt.

COUNTER-BRACE, in naval affairs, the lee-brace of the fore-top-ſail-yard: it is only diſtinguiſhed by this name at the time of the ſhip's going about, called tacking, at which time, when the ſail begins to ſhiver in the wind, this brace is hauled in to flatten the ſail againſt the lee-ſide of the top-maſt, and increaſe the effort of the wind in forcing her to turn round.

COUNTER-CHANGED, in heraldry, is when any field or charge is divided or parted by any line or lines of partition, conſiſting all interchangeably of the ſame tinctures.

COUNTER-CHARGE, a reciprocal charge brought againſt an accuſer.

COUNTER-DEED, a ſecret writing, either before a notary or under a private ſeal, which deſtroys, invalidates, or alters a public one.

COUNTER-DRAWING, in painting, is the copying a deſign, or painting, by means of a fine linen cloth, an oiled paper, or other tranſparent matter, where the ſtrokes appearing through are followed with a pencil, with or without colour. Sometimes it is done on glaſs, and with frames or nets divided into ſquares with ſilk or with thread, and alſo by means of inſtruments invented for the purpoſe, as the parallelogram.

COUNTER-ERMINE, in heraldry, the contrary to ermine, being a black field with white ſpots.

COUNTER-FOIL, or COUNTER-STOCK, in the exchequer, that part of a tally which is kept by an officer of the court. See *Tally*.

COUNTER-GUARD, in fortification, is a work raiſed before the point of a baſtion, conſiſting of two long faces parallel to the faces of the baſtion, making a ſaliant angle.

COUNTER-MARCH, in military affairs, a change of the face or wings of a battalion, by which means thoſe that were in the front came in the rear. It alſo ſignifies returning, or marching back again.

COUNTER-MARK, a mark put upon goods that have been marked before. It is alſo uſed for the ſeveral marks put upon goods belonging to ſeveral perſons, to ſhew that they muſt not be opened but in the preſence of them all, or ther agents.

COUNTER-PALED, *Contre Pallé*, in heraldry, is when the eſcutcheon is divided into twelve pales parted per feſſe, the two colours being counterchanged; ſo that the upper are of one colour, and the lower of another.

COUNTERPART, in muſic, one part to be applied to another. Thus the baſs is ſaid to be a counterpart to the treble. In law, the duplicate or copy of a deed.

COUNTER-PASSANT is when two lions are in a coat of arms, and the one ſeems to go quite the contrary way to the other.

COUNTER-PLEA, in law, a croſs or contrary plea.

COUNTER-POINT, in muſic, the art of compoſing harmony, or of diſpoſing ſeveral parts in ſuch a manner as to make an agreeable whole, or a concert.

COUNTER-POINTED, *Contre-Pointé*, in heraldry, is when two chevrons in one eſcutcheon meet in the points, the one riſing as uſual from the baſe, and the other inverted falling from the chief: ſo that they are counter to one another in the points.

COUNTERPOISE, in the manege, is the liberty of the action and ſeat of a horſeman; ſo that in all the motions made by the horſe, he does not incline his body more to one ſide than the other, but continues in the middle of the ſaddle.

COUNTER-POISON, an antidote or medicine to prevent the effects of poiſon. See *Poiſon.*

COUNTER-PROOF, in rolling-preſs printing, a print taken off from another freſh printed; which, by being paſſed through the preſs, gives the figure of the former, but inverted.

COUNTER-QUARTERED, *Contre ecartelé*, in heraldry, denotes the eſcutcheon, after being quartered, to have each quarter again divided into two.

COUNTER-SCARP, in fortification, the exterior talus or ſlope of the ditch; but it is often taken for the covered way and the glacis. In this ſenſe we ſay, the enemy have lodged themſelves on the counterſcarp.

COUNTER-SIGNING, the ſigning the writing of a ſuperior in quality of ſecretary. Thus charters are ſigned by the king, and counterſigned by a ſecretary of ſtate or lord chancellor.

COUNTER-TALLY, one of the two tallies upon which any thing is ſcored.

COUNTER-TENOR, called by the French, *haut-contre*, one of the middle parts of muſic oppoſite to the tenor. See *Tenor.*

COUNTER-TRIPPING is when two beaſts are borne in a coat in a walking poſture, the head of the one being next the tail of the other.

COUNTER, the name of a counting-board in a ſhop, and of a piece of metal with a ſtamp on it, ſometimes uſed in playing at cards.

COUNTER *of a Horſe*, that part of a horſe's fore-hand which lies between the ſhoulders and under the neck.

COUNTRY, among geographers, ſignifies a kingdom, province, or leſſer diſtrict. But its moſt frequent uſe is in contradiſtinction to town.

COUNTY, in geography, formerly ſignified the territory of a count or earl; but now it is uſed in the ſame ſenſe with ſhire.

England, for its better government, and the more eaſy adminiſtration of juſtice, is divided into fifty-two counties, each of which is ſubdivided into rapes, lathes, wapentakes, and hundreds; and theſe again into tythings. For the execution of the laws in the ſeveral counties, excepting Cumberland, Weſtmoreland, and Durham, every Michaelmas term officers are appointed, called ſheriffs: other officers of the ſeveral countries are lord-lieutenants, cuſtodes rotulorum, juſtices of the peace, bailiffs, high-conſtables, coroners, clerks of the market, &c. Of the fifty-two counties in England and Wales, four are termed counties-palatine, viz. Lancaſter, Cheſter, Durham, and Ely: theſe counties are reckoned among the ſuperior courts, and are privileged as to pleas; ſo that no inhabitant of ſuch counties ſhall be compelled by any writ to appear, or anſwer the ſame, except for error, and in caſes of treaſon, &c. The counties-palatine of Durham and Cheſter are by preſcription, where the king's writs ought not to come, but under the ſeal of the counties-palatine, unleſs it be a writ of proclamation. There is a court of chancery in the counties-palatine of Lancaſter and Durham, over which there are chancellors. See *Chancellor.*

Scotland is divided into thirty-three counties, the government of which is committed to ſheriffs. See *Sheriff.*

COUNTY-CORPORATE, a title given to ſeveral cities on which the Engliſh monarchs have thought proper to beſtow extraordinary privileges, annexing to them a particular territory of land, or juriſdiction, as the county of Middleſex annexed to the city of London, the county of the city of York, the county of the city of Briſtol, &c.

COUNTY-COURT, a court of juſtice, held every month in each county, by the ſheriff or his deputy.

It has the determination of debts and treſpaſſes under forty-ſhillings.

COUPED, *Coupeé*, in heraldry, is uſed to expreſs the head, or any limb, of an animal, cut off from the trunk, ſmooth; diſtinguiſhing it from that which is called erazed, that is, forcibly torn off, and therefore is ragged and uneven.

COUPED, alſo ſignifies ſuch croſſes, bars, bends, chevrons, &c. as do not touch the ſides of the eſcutcheon, but are, as it were, cut off from them.

COUPLET, a diviſion of a hymn, ode, ſong, &c. wherein an equal number, or equal meaſure, of verſes is found in each part, which diviſion, in odes, are called ſtrophes. See *Strophe.*

Couplet, by an abuſe of the word, is frequently made to ſignify a couple of verſes.

COURANT, or CURRANT, in a general ſenſe, expreſſes the preſent time, as we ſay, the year 1774 is the currant year, the firſt of this currant month, that is, this year and month.

COURANT, in a commercial ſenſe, any thing that has a courſe, or is received in commerce, as the courant coin, &c. alſo the ordinary and known price of goods, &c. in which ſenſe we ſay, the price courant.

COURIER, a meſſenger ſent expreſs, to carry diſpatches.

COURSE, in navigation, the point of the compaſs on which the ſhip ſteers; or the angle intercepted between the tract of the ſhip and the meridian.

COURSE *of Plinths*, the continuity of a plinth of ſtone, or plaſter, in the face of a building, to mark the ſeparation of the ſtones.

COURSE, the time ſpent in learning the elements of a ſcience; as a ſtudent is ſaid to go through his courſes of philoſophy, divinity, mathematics, &c. at the univerſity.

COURT, *Curia*, in a law ſenſe, the place where judges diſtribute juſtice, or exerciſe juriſdiction: alſo the aſſembly of judges, jury, &c. in that place.

COURT-BARON, a court that every lord of a manor has within his own precincts.

COURT *of Chivalry*, or the *Marſhal's Court*, that whereof the judges are the lord high conſtable, and the earl marſhal of England.

COURT *of Conſcience*, a court in the cities of London, Weſtminſter, and ſome other places, that determines matters where the debt is under forty ſhillings.

COURT *of Delegates*, a court where delegates are appointed by the king's commiſſion, under the great ſeal, upon an appeal to him from the ſentence of an archbiſhop, &c. in eccleſiaſtical cauſes; or of the court of admiralty in any marine cauſe.

COURT-LEET, a court ordained for the puniſhment of offences under high-treaſon againſt the crown.

COURT-MARTIAL, a court appointed for the puniſhing offences in officers, ſoldiers, and ſailors, the powers of which is regulated by the mutiny bill.

COURT, an appendage to a houſe or habitation, conſiſting of a piece of ground, incloſed with walls, but open at top.

COURT, the palace or place where a king or ſovereign prince reſides.

COURTESY, or CURTESY *of England*, a certain tenure whereby a man marrying an heireſs ſeized of lands of fee ſimple, or fee tail general, or ſeized as heir of the tail ſpecial, and has a child by her that comes alive into the world, though both it and his wife die forthwith: yet if ſhe were in poſſeſſion, he ſhall keep the land during his life, and is called *tenant per legem Angliæ*, or tenant by the courteſy of England; becauſe this privilege is not allowed in any country except Scotland, where it is called *curialitas Scotiæ*.

COUSIN, a term of relation between the children of brothers and ſiſters, who in the firſt generation are called couſin-germans, in the ſecond generation, ſecond couſins, &c. If ſprung from the relations of the father's ſide, they are denominated paternal couſins, if on the mother's ſide, maternal.

COW, in zoology, the female of the ox kind. See *Bos* and *Ox*. The marks of a good cow, are theſe: the forehead ſhould be broad, the eyes black, the horns large and clear, and the neck long and ſtrait. The belly ſhould be large and deep, the thighs thick, the legs round, with ſhort joints, and the feet broad and thick. As to colour, the red cow is ſaid to give the beſt milk, and the black to bring forth the beſt calves; but the cow that gives milk longeſt is the moſt beneficial both for breeding and profit; and the moſt proper time to calve in is March or April. Before calving, ſhe ſhould be put into good paſture, or, if it happen in winter, ſhould be well fed with hay; and the day and night after ſhe has calved, her drink ſhould be a little warmed.

COW-ITCH, in botany, the Engliſh name of the hairy phaſeolus. See *phaſeolus*.

COW's-LIP, *Primula Veris*. See *Primula*.

COWARD, in heraldry, a term given to a lion borne in an eſcutcheon with his tail doubled, or turned in between his legs.

CRAB, in naval affairs, a ſort of wooden pillar let down through a ſhip's decks, having its lower-end reſting in a ſocket called a ſawcer: and in the upper end two or three holes above one another through the middle of it, into which long bars are let, whoſe length are nearly equal to the breadth of the deck. It is uſed to heave in the cable, or purchaſe any other weighty matter which requires a great mechanical power.

CRAB's CLAWS, *Chelæ Cancrorum*, in the materia medica, the tips of the claws of the common crab, broken off at the verge of the black part, ſo much of the extremity of the claws only being allowed to be uſed in medicine as is tinged with this colour. The blackneſs however is only ſuperficial: they are of a greyiſh white within, and when levigated, furniſh a tolerably white powder. Crab's claws are of the number or the alkaline abſorbents, but they are ſuperior to the generality of them in ſome degree, as they are found on a chemical analyſis to contain a volatile urinous ſalt. They are always kept in the ſhops levigated to a fine powder, and are ſometimes preſcribed ſingly, though rarely, becauſe of their want of the beautiful white colour of ſome of the others. They are the baſis, however, of the famous Gaſcoigne-powder, the lapis contrayerva, and many other of the compound ſudorific powders.

CRAB's EYES, *Oculi Cancrorum*, in pharmacy, a ſtrong concretion in the head of the cray-fiſh. They are rounded on one ſide, and depreſſed and ſituated on the other, conſiderably heavy, moderately hard, and without ſmell.

Crab's eyes are much uſed both in the ſhop medicines and extemporaneous preſcriptions, being accounted not only abſorbent and drying, but alſo diſcuſſive and diuretic.

⁂ CRACOW, or CRACOVIA, the capital city of Poland, with a biſhop's ſee. It is ſeated on the Viſtula, and is the largeſt and moſt important city in that kingdom. The ſtreets are broad and ſtrait, but very filthy. The houſes are five ſtories high, and built with free-ſtone, but covered with ſhingles. The city has two large ſuburbs; it is ſurrounded with deep ditches, encompaſſed with thick walls, and defended by ſtrong towers. Auguſtus III. king of Poland, was crowned here, with his conſort, January 17, 1734. The largeſt and principal church is dedicated to St. Staniſlaus. The riches of this church are immenſe, and the offices are read in it day and night, without interruption. The Jeſuits have a fine church here, as well as the Dominicans. The biſhop of Cracow is in poſſeſſion of the duchy of Severia and thirteen towns. In 1401, there was an univertſiy founded here, which is the moſt celebrated of any in Poland; it has twelve colleges; all employments, as well eccleſiaſtical as ſecular, are generally given to Polanders who have been educated here. This city ſuffered greatly during the civil diſſenſions; for the plague, famine, and war, made a great havock in it at the ſame time, and deſtroyed almoſt half of the inhabitants; beſides, there was a great fire, which reduced part of the city to aſhes. In 1702, the Swedes became maſters of Cracow, and burnt the palace, down to the ground, which was a magnificent ſtructure, and has not been ſince rebuilt. The eſtabliſhed religion is the Roman Catholic; but they tolerate the Jews, who are ſaid to amount here to twenty thouſand. It is one hundred and fifty miles ſouth of Buda, one hundred and eighty north-eaſt of Vienna, and ſeven hundred and fifty from Paris. Long. 19. 30. E. Lat. 50. 8. N.

CRADLE, a well known machine, in which infants are rocked to ſleep.

CRADLE, in ſurgery, a caſe in which a broken leg is laid after being ſet.

CRAMBE, wild ſea-cabbage, in botany, a genus of plants which is uſed as an aliment like other cabbage, when very young, but is eſteemed more hot and dry. Dale tells us, the leaves heal wounds, and diſcuſs inflammations and other tumours.

CRAMP, in medicine, a convulſive contraction of a muſcular part of the body, being either natural, as in convulſive conſtitutions, or accidental, from living in cold places, under ground, &c. It affects all parts indifferently, but the ham, calves, feet, and toes, oftener than the arms and hands: it is ſeldom mortal, though its returns are often quick, and continuance long, with great pain and diſtention of ſome veſſels, as appears from the knots and ganglions it occaſions. If it be natural, obſerve the cure as in an epilepſy or convulſions; if accidental, it is removed by rubbing the part affected.

CRAMP-FISH, the torpedo. See TORPEDO.

CRAMP-IRON, or CRAMPS, a piece of iron bent at each end, ſerving to faſten together pieces of wood, ſtones, or other things.

CRANE, a machine uſed in building and commerce, for raiſing large ſtones and other weights.

It is of two kinds; in the firſt, only the gibbet moves upon its axis; and in the ſecond, called the rat's-tail crane, the whole crane, with its load, turns upon its axis.

Chimney CRANE, a kitchen utenſil uſed for hanging a pot or the like on; and being moveable, wafts it off and on the fire at pleaſure.

CRANE, a name given to the ſiphon. See *Siphon*.

CRANE's BILL, among ſurgeons, a kind of ſorceps, ſo called from its figure.

CRANE's BILL, in botany, the geranium.

CRANK, a contrivance in machines, in the manner of an elbow, only of a ſquare form, projecting from a ſpindle, and ſerving by its rotation to raiſe and fall the piſtons of engines.

CRANK, the iron ſupport for a lanthern, or the like; alſo the iron made faſt to a ſtock of a bell for ringing it.

* CRANMER, (THOMAS) archbiſhop of Canterbury, was born at Aſlaton in the county of Nottingham; educated at Cambridge, and took the degree of doctor of divinity in 1523. Pleading for king Henry's divorce from Catharine of Spain, he ſo pleaſed the king, that he was made archdeacon of Taunton, and afterwards ſent ambaſſador into France, Italy, and Germany, and in 1533 he was made archbiſhop of Canterbury. He ſhewed himſelf a zealous promoter of the reformation, and procured the convocation to petition the king that the Bible might be tranſlated into Engliſh; encouraged the printing and publication of it. He next forwarded the diſſolution of the monaſteries, which was one of the greateſt obſtacles to the reformation. But though he had before pronounced the ſentence of divorce between king Henry and queen Catherine, and had married him to Anne Boleyn, yet only three years after, viz. in 1536, he alſo divorced Henry from his laſt queen. He oppoſed the pope's ſupremacy; and yet in the year 1538, with ſome other of the biſhop's, fell under the king's diſpleaſure for not being willing that the monaſteries ſhould be ſuppreſſed for the king's own uſe.

In 1540 he was one of the commiſſioners for inſpecting into matters of religion; he alſo gave orders for the taking away of ſuperſtitious ſhrines; and in the year 1540 procured the act for the advancement of true religion. But the following year he was complained of both in the houſe of comons and the privy council, when the king protected him, and gave him his ring, as a token that he took the affair into his own hands. On king Henry's deceaſe, he was appointed one of the executors of his will, and one of the regents of the kingdom: and on the 20th of February, 1545-6, he crowned king Edward VI. to whom he had been godfather, as he was alſo to the lady Elizabeth. He ſtill continued labouring for the reformation of religion: In 1550 a review was made of the Book of Common Prayer, which by his care had been drawn up, and ſeveral things were amended that were thought to favour too much of ſuperſtition; and in 1552 he had a ſhare in compiling the articles of religion. In 1553 he oppoſed the new ſettlement of the crown upon the lady Jane Grey; but upon king Edward VIth's deceaſe, appeared for that lady. Queen Mary's acceſſion to the throne put a period to his happineſs; he was preſently after committed to the Tower, and condemned for high treaſon, of which he was however pardoned. In 1554 he, with Ridley and Latimer, were removed to Oxford, in order for a public diſputation with the papiſts, which was held with great noiſe and triumph on the ſide of the latter, and with as much gravity, learning, and modeſty on the ſide of the proteſtant biſhops: two days after Cranmer and the two others were condemned as heretics; but this ſentence being void in law, the pope's authority not being yet re-eſtabliſhed in England, a new commiſſion was ſent from Rome for his trial and conviction. Accordingly on the 12th of September 1555, he appeared before the commiſſioners at St. Mary's church, Oxon, where he was accuſed of blaſphemy, perjury, incontinency, and hereſy, againſt all which he vindicated himſelf; and at laſt was cited to appear at Rome within eighty days to anſwer in perſon; but being cloſely confined, the pope ſent his letters, in which he declared him contumacious for not appearing at Rome within the limited time, with orders that he ſhould be degraded and deprived, which was accordingly done in the moſt ignominious manner.

At laſt, however, Cranmer's, courage, wiſdom, and fortitude, forſook him; he had the weakneſs to recant, and renounce the proteſtant religion; but notwithſtanding this, the mercileſs queen reſolved to glut her revenge by committing him to the flames; which cruel ſentence was accordingly executed on the 21ſt day of March 1556; when repenting of his cowardice and inſincerity, he ſtretched out his right hand into the flame, and held it there unmoved (except that once he wiped his face with it) till it was conſumed, crying with a loud voice, “This is the hand that wrote it. This hand hath offended,” and often repeating, “This unworthy right hand.” At laſt the fire blazing up, he ſoon expired, never ſtirring or crying out all the while, only keeping his eyes fixed towards heaven, and repeating more than once, “Lord

“Jeſus, receive my ſpirit.” Thus died this great reformer, in the ſixty ſeventh year of his age. A perſon remarkable for his charity and munificence to the indigent; for his humility and affability, his wiſdom and love of truth.

CRANNY, in glaſs-making, an iron inſtrument, wherewith the necks of glaſſes are formed.

CRAPE, in commerce, a kind of ſtuff, made in the manner of gauze, with raw ſilk, gummed and twiſted in the mill.

CRASIS, among phyſicians, ſuch a due mixture of qualities in a human body, as conſtitutes a ſtate of health.

CRASIS, in grammar, the contraction of two letters into one long one, or a dipthong.

CRASSAMENTUM, in phyſic, the thick red, or fibrous part of the blood, otherwiſe called cruor, in contradiſtinction to the ſerum, or aqueous part. See *Blood*.

CRATER, in aſtronomy, a conſtellation of the ſouthern hemiſphere, conſiſting of ſeven ſtars, according to Ptolemy's catalogue, of eight in Tycho's, and eteven in the Britannic catalogue.

CRAY-FISH, the long tailed ſquillæ. See *Squilla*.

CRAYON, or PASTIL, among painters, a compoſition of colours, reduced to the texture of chalk; and uſed dry, in the form and manner of pencils, for painting on paper.

White CRAYONS.—For white crayons for common purpoſes, chalk, in its natural ſtate, is ſuperior to any compoſition: it ſhould be choſen white, pure, and of the moſt cohering texture; and it muſt be cut firſt into ſquares, by means of ſmall ſaws made for this uſe, of three inches length, and a quarter of an inch in thickneſs; and afterwards formed into a proper pencil-ſhape, by taking off the corners with a penknife, and duly ſloping the point. Where an extraordinary degree of whiteneſs is required, a crayon may be made from flake white, as prepared by the colourmen; which being well powdered and moiſtened with milk, to the conſiſtence of a paſte, muſt be formed in a pencil-ſhape, and then dried, but without heat, as that would tend to injure the whiteneſs.

Red CRAYONS.—For red crayons of the ſcarlet hue, vermilion and red lead may be uſed, with ale-wort boiled till it appear ſlightly glutinous to the touch, and further inſpiſſated by the addition of gum-tragacanth; the proportion of which may be a ſcruple to a pint of the thick wort. With this gluten, the vermilion, or red lead, muſt be reduced to the ſtate of a paſte, by grinding them together, and then formed into the proper ſhape, and dried with a gentle heat.

Where the orange caſt of red lead is not particularly wanted, it is ſafer to uſe vermilion; for though red lead will ſtand much better uſed this way than in oil, yet the vermilion is ſtill more ſecure, as nothing can change it without a burning heat.

The ſcarlet oaker gives a fouler red crayon, but yet very uſeful, if it be compounded with the ale-wort inſpiſſated both by boiling and the addition of gum-tragacanth, in the proper manner directed for vermilion.

Common Indian red may be likewiſe treated in a parallel manner, and will give other teints of red.

Red oaker requires no compoſition; but if it be choſen pure, and of a good colour, will afford uſeful crayons by the ſame management as chalk.

Lake muſt be uſed for crimſon crayons, and may be brought, when well ground with ale-wort, to a proper texture; but if, as is the nature of ſome parcels, it appear too gummy, make it up with the decoction of oat-meal, inſtead of the ale-wort.

It would be extremely proper to have crayons of carmine, if the price did not make the uſe of it too expenſive: conſidering that circumſtance, it is more expedient to uſe it rubbed in by a leather roller, by which it may be conveniently laid on where it may be neceſſary.

A ſmall crayon compounded of the beſt and moſt ſcarlet lake, with about a third part of carmine, ſhould however not be wanting. They may be worked up with milk, and a little decoction of oatmeal, with a ſmall proportion of gum-tragacanth; but ſome carmine is ſufficiently glutinous, and requires no binder, which ought therefore to be firſt tried before the binders are added.

Small crayons muſt likewiſe be made of carmine, and pearl white, in different proportions; and the ale-wort muſt be more or leſs inſpiſſated, according to the quantity of white; but as the carmine differs greatly in different parcels as to its gummy conſiſtence, this muſt be regulated by diſcretion.

Blue CRAYONS.—For a deep blue crayon, the darkeſt Pruſſian blue may be formed into a crayon by grinding it with the decoction of oatmeal. If the tenacity be not ſufficient, the ale-wort muſt be added.

Indico, when good, will likewiſe produce a deep blue crayon, with ale-wort inſpiſſated by boiling.

For paler blues, Pruſſian blue of different degrees of lightneſs may be uſed with the ale-wort; but the ale-wort muſt be inſpiſſated by boiling, or the addition of ſize or gum tragacanth, in proportion to the lightneſs, the darker kinds of Pruſſian blue being of a more glutinous nature than the lighter.

Verditer will alſo make a good blue crayon: but it muſt be uſed with ale-wort ſtrongly inſpiſſated.

Bice ſhould likewiſe compoſe another crayon, treated as verditer.

Ultramarine being too dear to form crayons, ſhould be uſed in the manner above directed for carmine.

Yellow CRAYONS.—The prepared orpiment, or pigment, called king's yellow, forms the brighteſt and fulleſt coloured crayons; but the poiſonous quality, and garlick ſcent of it, are ſuch faults as render it on the whole much inferior to that next mentioned.

The king's yellow, may, however, be formed into a crayon with ale-wort inſpiſſated by boiling, and the addition of gum-tragacanth; but it muſt be dried without any heat.

The turpeth mineral well levigated, and waſhed over, makes a very fine crayon, of a cool, but very bright colour. It may be treated for this end exactly in the manner above-directed for vermilion.

Dutch pink and Engliſh pink make crayons of a pretty good yellow colour; but are not ſo ſecure from flying as the two above-mentioned.

Yellow oaker may alſo be formed into a crayon in the ſame manner as chalk; or it may be ground and waſhed over, and then uſed with the inſpiſſated ale-wort.

Green CRAYONS.—The cryſtals of verdigriſe, properly managed, make the brighteſt green crayon. They ſhould be reduced to a very fine powder, by grinding on the ſtone with ſpirit of wine, or oil of turpentine; and then formed into a paſte by ale-wort, highly boiled, and inſpiſſated ſtill further by gum-tragacanth; but as little fluid as poſſible ſhould be employed in their compoſition. They ſhould likewiſe be dried without heat.

Pruſſian blue, and turpeth mineral, compounded in different proportions, form alſo a variety of good green crayons. They muſt be worked up with ale-wort thickened by boiling.

Verditer and turpeth mineral form a good pale green: but they require ale-wort, both thickened by boiling and the addition of gum-tragacanth.

Orange CRAYONS.—King's yellow, or turpeth mineral, with red lead, or vermilion, makes a bright orange crayon. They muſt be compounded with ale-wort thickened as well by gum-tragacanth as boiling.

Orange crayons may likewiſe be formed from Dutch or Engliſh pink, compounded with red lead, or vermilion: but the ale-wort need not, in this compoſition, be ſo ſtrongly inſpiſſated as for the laſt.

Purple CRAYONS.—A very bright purple crayon may be formed of deep Pruſſian blue, and carmine, compounded by means of the decoction of oatmeal: but this being expenſive, muſt be made ſmall, and reſerved only for thoſe caſes where great brightneſs is neceſſary.

Deep Pruſſian blue and lake, treated as the above, form a crayon next in brightneſs to the above.

For a leſs bright purple, indico may be uſed in the place of the Pruſſian blue; but the teint will not be ſo deep; and ale-wort ſlightly inſpiſſated may be uſed inſtead of the decoction of oatmeal.

Brown CRAYONS.—For forming a full brown crayon, neither inclining to the olive or orange, mix brown oker and biſtre, and work them up with the ale-wort inſpiſſated moderately by boiling.

Spaniſh brown, umbre, and the comcom and true Indian red, may likewiſe be compounded in the ſame manner with biſtre, into crayons of different teints of brown; and ivory-black may be added, where neceſſary, to darken them, and increaſe the variety.

Spaniſh-brown and umbre may be likewiſe formed alone into brown crayons, by means of the ale-wort inſpiſſated by boiling and a ſmall addition of gum-tragacanth.

For diluted browns, calcined fuller's-earth may be employed, either alone, or mixt with chalk in different proportions. The crayons may be formed by means of ale-wort moderately inſpiſſated by boiling.

Black and *Grey* CRAYONS.—Black crayons may be formed out of pieces of charcoal well burnt, by cutting them into a proper ſhape, in the manner directed for chalk. The kind of charcoal ſaid to be the beſt for this purpoſe, is that made from the wood of the willow.

Good black crayons may likewiſe be formed of ivory-black mixt with a little deep Pruſſian blue or indico. It muſt be worked up by ale-wort boiled thick, with a ſmall addition of glover's ſize.

Grey crayons may be formed of the ivory, or lamp-black, mixt with chalk in different proportions, and compounded by means of ale-wort well inſpiſſated by boiling.

CREAM, the fat unctuous part of the milk that ſwims upon the ſurface. See *Milk.*

CREAM *of Tartar*, in pharmacy, a preparation of tartar made in the following manner;

Boil any quantity of crude tartar in water, till the parts which are capable of ſolution be entirely diſſolved; filter the liquor whilſt hot through a flannel bag into an earthen-pan, and evaporate till a pellicle appears, then ſet it in a cold place, and ſuffer it to ſtand quietly two or three days: afterwards decant the fluid, and the cryſtals will be found adhering to the pan: ſcrape them off, and evaporate the fluid as before, and ſet it again to cryſtalliſe, and repeat the operation till all the cryſtals are formed. Cream of tartar is a gentle purge. It attenuates and reſolves tough humours, and is good againſt obſtructions of the Viſcera, and in cachectic complaints. It is alſo a good adjunct to chalybeate medicines.

CREATION, the producing ſomething out of nothing, which ſtrictly and properly is the effect of the power of God alone, all other creations being only tranſformations, or change of ſhape. The creation of the world was 4004 years before Chriſt.

* CREATION, by letters patent, was firſt uſed by Edward III, in 1344.

CREDENTIALS, letters of recommendation, and power, more eſpecially ſuch as are given to ambaſſadors, or public miniſters, by the prince that ſends them to foreign courts.

CREDIBILITY, a ſpecies or kind of evidence, leſs indeed than abſolute certainty or demonſtration, but greater than mere poſſibility: it is nearly allied to probability, and ſeems to be a mean between poſſibility and demonſtration. See *Evidence.*

CREDIT, in commerce, a mutual truſt or loan of merchandize, or money, on the reputation of the probity and ſufficiency of a dealer.

CREDITOR, one to whom any ſum of money is due, either by obligation, promiſe, or otherwiſe.

CREDITOR, in book-keeping. See *Book-keeping.*

CREED, a brief ſummary of the articles of a Chriſtian's belief. See *Faith.*

CREEK, that part of an haven where any thing is landed from the ſea.

CREEPER, in ornithology, a name given to ſeveral ſpecies of iſpida, otherwiſe called certhia, or certhius, and in Engliſh the ox-eye.

CREEPER, in naval affairs, a ſmall inſtrument of iron, having a ſhank and four hooks or claws, and ſomething reſembling a grappling. It is uſed to throw into the bottom of any river or harbour, with a rope faſtened to it, to hook and draw up any thing from the bottom. See *Grappling.*

CREMASTER, in anatomy, the name of a muſcle of the teſticle, of which there is one on each ſide.

CRENATED, among botaniſts, leaves, the edges of which are furniſhed with indentings, contiguous to each other, and neither inclining toward the point or baſe. Of theſe ſome are accute, other obtuſe, &c.

CREPUSCULUM, in aſtronomy, twilight; the time from the firſt dawn of the morning, to the riſing of the ſun; and again, between the ſetting of the ſun, and the laſt remains of day.

CRESCENT, *Creſcens*, the new moon, which, as it begins to recede from the ſun, ſhews a little rim of light, terminating in points, called horns, that are ſtill increaſing, till it is in oppoſition to the ſun, at which time it is full moon, or quite round.

CRESCENT, in heraldry, a bearing in form of a new moon.

CRESS, or CRESSES, in botany, the naſturtium. See *Naſturtium.*

Indian CRESS, the cardamindum, or tropæolum of botaniſts. See *Tropæolum.*

Sciatica-CRESS. See *Cardamine.*

Sciatica-CRESS is alſo a name given to the lepidium, or dittander.

Water, or *Winter*-CRESS, the ſame with the ſiſymbrium. See *Siſymbrium.*

* CRESSY, *Battle of*, where the king of Bohemia's ſtandard, with the motto *Ich Dien*, *(I ſerve)* was taken, and ever ſince uſed as the creſt to the arms of the princes of Wales, Auguſt 26, 1346.

Edward the third, having reſolved to beſiege Calais, followed that route by ſlow marches, and halted the firſt night at the caſtle of Noyelle, from whence he detached parties to burn Crotoye and other towns in the neighbourhood. Next day he arrived at Creſſy, where he encamped on an eminence, with a wood in the rear, and placed the baggage-waggons on the flanks, to ſecure them from the attack of the enemy. While he thus purſued his purpoſe with great intrepidity and deliberation, Philip, imagining that he fled before his arms, reſolved to overtake and chaſtiſe the fugitive, who had made ſuch havock in his kingdom. He accordingly marched from Abberville towards the village of Creſſy; and Edward being informed of his approach, drew up his army, conſiſting of thirty thouſand men, in order of battle. The firſt line was commanded by the prince of Wales, juſt turned of fifteen, accompanied by the earls of Warwick and Oxford, Godfrey de Harcourt, the lords Stafford, Holland, Chandois, Clifford, with the flower of the Engliſh nobility, eight hundred men at arms, four thouſand archers, and ſix thouſand Welſh infantry. The ſecond line was conducted by the earls of Arundel and Northampton, the lords Willoughby, Roos, Baſſet of Sipcote and Multon, Sir Lewis Tufton, and a great number of gentlemen, eight thouſand men at arms, four thouſand halberdiers, and about half that number of archers. Thoſe two lines were formed on the declivity of the hill in ſuch a manner, as to ſupport one another; and the ſecond outflanked the firſt, ſo as to prevent its being ſurrounded by the enemy on the left, where it was ſecured by a ſemi-circular ditch dug in the night for this purpoſe, terminating in the park of Creſſy, and the ſmall brook of Maye, which waters that village. The king himſelf commanded the third line, poſted on the brow of the eminence behind the other two, compoſed of ſeven hundred men at arms, five thouſand three hundred billmen, and ſix thouſand archers: he was attended by the lords Mowbray, Mortimer, Dagworth, Sir Hugh Haſtings, and other perſons of diſtinction. He and the prince of Wales had that morning received the ſacrament with great devotion; and his behaviour denoted the calm intrepidity of invincible courage and reſignation. Even the deportment of the prince of Wales, though a boy, was, in all reſpects, manly, heroic, and worthy of the great example he propoſed to imitate. The army being thus arranged, the king rode from rank to rank, with a chearful countenance, encouraging the ſoldiers to exert themſelves for the honour of their country, the defence of their ſovereign, and the preſervation of their own lives; and his words, his amiable figure, and his complacency, animated them even to a degree of rapturous expectation. That they might have every motive to inſpire them with extraordinary courage, he knighted fifty young gentlemen; and among the reſt Sir John Beauchamp, whom he appointed to bear the royal ſtandard in the battle. Theſe previous diſpoſitions being made, he ordered his men at arms to diſmount, that the horſes might not be fatigued before the battle began, and his ſoldiers to be refreſhed with a plentiful meal; after which they ſat down in their ranks upon the graſs to take their eaſe, that they might be freſh and vigorous at the approach of the enemy. The French king had begun his march at ſun riſe from Abbeville, with an army of one hundred thouſand men; and having advanced two leagues, halted to draw up his cavalry in order of battle, while the infantry continued their march. Being now at the diſtance of five miles from the Engliſh, he detached four knights to view the poſture of the enemy, which they were permitted to ſurvey at leiſure without moleſtation. They were aſtoniſhed at the ſilence, order, and compoſure of the Engliſh army; and one of them, who was an experienced ſoldier belonging to the king of Bohemia, aſſured Philip there was no danger of Edward's running away. He told him there was neither fear nor precipitation in the countenance of the Engliſh troops, but great ſerenity and reſolution; he ſaid their diſpoſition was excellent, and their bodies in full vigour; and exhorted the king of France to advance no farther that night, but allow his infantry to refreſh themſelves from the fatigue of a tedious march, otherwiſe he would not anſwer for the conſequences, as they were at preſent ſpent with hard duty, and moving in the utmoſt diſorder. Philip perceived the ſanity of this advice, and ſent immediate orders to the van to halt, until they ſhould receive further inſtructions. But his commands were very imperfectly obeyed; for his army comprehending a great number of auxiliaries conducted by independant princes, among whom there was no ſubordination, they diſputed the poſt of honour with each other, and vied in preſſing forward to attack the enemy: when the front ranks halted, thoſe who ſucceeded continuing to move with great impetuoſity, that enormous body was puſhed on towards Creſſy in ſuch confuſion, as diſabled them from acting with the leaſt regularity. Even Philip himſelf, with the princes of the blood, were carried away by the croud; and he found it impoſſible to retard their motions, until they came within ſight of the Engliſh. There he made ſhift to arrange them in three diſtinct bodies, the firſt of which, commanded by John de Luxemburgh the blind king of Bohemia, conſiſting of three thouſand men at arms, nine and twenty thouſand infantry, and fifteen thouſand Genoeſe croſs-bows, planted oppoſite to the Engliſh archers. The ſecond diviſion, conducted by Charles count of Alencon, was compoſed of four thouſand men at arms, and twenty thouſand infantry, advanced in a line with the firſt battalia. Philip in perſon commanded the third body as a reſerve, conſiſting of twelve thouſand men at arms, and fifty thouſand infantry. About three in the afternoon, the French king began the battle, by ordering the Genoeſe to charge; but they were ſo fatigued with their march, that they cried out for a little reſt before they ſhould engage. The count of Alencon, being informed of their petition, rode up and reviled them as cowards, commanding them to begin the onſet without delay. They advanced with great reluctance, which was increaſed by a heavy ſhower which fell that inſtant, and rendered their bow-ſtrings uſeleſs; ſo that the diſcharge they made produced very little effect. On the other hand, the Engliſh archers, who had kept their bows in caſes, and were favoured by a ſudden gleam of ſun-ſhine that flaſhed in the faces of the enemy, began to let fly their arrows ſo thick and with ſuch good aim, that terrible havock was made among the Genoeſe, who finding themſelves expoſed to certain death, without being able to annoy their enemy, began to fly with diſorder and precipitation, and were trodden down by the men at arms, under the command of count Alencon. That nobleman making a wheel in order to avoid the bow-men, charged with great fury the body commanded by the prince of Wales, who ſuſtained the ſhock without flinching, and gave the count ſuch a warm reception, that the greateſt part of his men at arms was left dead upon the ſpot. While he maintained this conflict, the column of archers forty deep, poſted on the right, which had already defeated the Genoeſe, was broke, by an impetuous onſet of three ſquadrons of French and German knights, and a great body of men at arms; ſo that the prince was attacked both in front and flank at the ſame time. In this emergency, the earl of Warwick diſpatched a meſſenger to the king, deſiring him to advance to the prince's ſuccour: Edward, whom he found in a windmil viewing the engagement, aſked with great deliberation, if his ſon was dead, wounded, or unhorſed; and being anſwered in the negative, "Well then, ſaid he, go back and "tell Warwick, that I ſhall not inter-"meddle in the fray, but let my boy win "his ſpurs by his own valour." He perceived the confuſion of the French and their ſtandards dropping very faſt in that place where the prince was ſtationed, ſo that he concluded the enemy had miſcarried in their aſſault; and as he had lately beſtowed the honour of knighthood upon his ſon, he was loth to deprive him of any ſhare of the glory. His conjecture was juſt: before the knight returned with his anſwer, the archers had cloſed, and the earls of Arundel and Northampton advanced with a freſh body, by which the aſſailants were ſurrounded and cut in pieces. Theſe victorious bands, joining under prince Edward, who fought with amazing proweſs, advanced to attack in their turn the main body of the enemy commanded by Philip, who had been prevented, by the diſorderly flight of his firſt line, from coming up to ſuſtain the troops which had broke through the Engliſh archers. Here the battle was renewed with great obſtinacy; Philip in perſon, the king of Bohemia, and his ſon Charles, with a number of auxiliary princes, animating their ſoldiers to deeds of glory, not only by words, but by the example of their own perſonal proweſs. Nothing, however, could reſiſt the impetuoſity and valour of the prince of Wales and his attendants. Fluſhed with the ſucceſs he had already received from his father, under whoſe eye he acted in this firſt eſſay of his manhood. The blind king of Bohemia, whoſe ambition had for many years embroiled the beſt part of Europe, enquiring about the fate of the day, was told that the French were in terrible diſorder; a great number of noblemen ſlain; that his ſon Charles had been obliged to retire dangerouſly wounded; that the Engliſh had made a dreadful carnage; and that the prince of Wales bore down every thing before him with irreſiſtable valour. John having received this information, commanded his knights to lead him into the hotteſt part of the battle againſt the young warrior. Accordingly four of his attendants placing him in the middle, and interlacing the bridles of their horſes, they ruſhed together into the thickeſt of the enemy, and the blind king interchanged a few ſtrokes with Edward; but they were ſoon parted, and the Bohemian, with his followers, fell in the confuſion of the battle. By this time Philip himſelf, after two horſes had been killed under him, was grievouſly wounded in the neck and thigh, and being carried out of the battle by John of Hainault, the ſtandard of France was beaten down. Then all reſiſtance was laid aſide; univerſal rout and undiſtinguiſhed carnage enſued: though a great number of the French would have eſcaped under favour of the approaching night, had not the king of England ordered large fires to be made upon the neighbouring hills, by the light of which the victors prevented them from rallying or uniting, and compleated the ſlaughter. Edward, ſeeing the victory accompliſhed, deſcended from the hill, and running up to the prince of Wales, embraced him tenderly in the ſight of the whole army, ſaying, "My valiant ſon, God grant you "may perſevere in the courſe you have "ſo gloriouſly begun. You have acquit-"ted yourſelf nobly; and well are you "worth the kingdom that will be your "inheritance." The prince made no other reply than that of a profound obeiſance; and indeed his modeſty and moderation were altogether ſurprizing and unexampled. In this famous battle, which was fought on the 26th day of Auguſt, John king of Bohemia, James king of Majorca, Ralph duke of Lorraine, the counts of Alençon, Flanders, Blois, Vaudemont, Harcourt, Auxerre, Aumale, St. Pol, and Sancerre, four and twenty bannerets, twelve hundred knights, fifteen hundred gentlemen, four thouſand men at arms, thirty thouſand infantry, are ſaid to have fallen, while the loſs of Edward did not exceed three knights, and an inconſiderable number of ſoldiers. Philip attended by five knights and about ſixty followers, was carried to the caſtle of La Broye, about a league from Creſſy, where, having taken ſome refreſhment, he ſet out at midnight for Amiens, where he arrived early next morning. The victorious Edward having ſounded a retreat, and ordered his men to be upon their guard all night, leſt the French ſhould rally, detached a party of archers and lancers at day light, to purſue the fugitives, and they meeting in a fog with the militia of Rouen and Beauvais, on their march to join Philip's army, routed them at the firſt onſet. The archbiſhop of Rouen, and the grand prior of France advancing with a freſh reinforcement, were defeated and ſlain, with two thouſand of their followers. The Engliſh gathering ſome French ſtandards that lay ſcattered on the field of battle, planted them on a neighbouring hill, as a decoy to the enemy who were diſperſed about the villages, and the ſtratagem ſucceeded; for they flocked in numbers to their colours, and were hewn in pieces without mercy; and indeed the only circumſtance which tarniſhed the glory of this victory, was the order which Edward iſſued before the engagement, to give no quarter. The ſame injunction is ſaid to have been laid upon the French army by their monarch: but this was an inſtance of barbarity, in which his example ought not to have been followed. Though he refuſed mercy to the living, he was extremely courteous to the dead: he ſent the body of John, king of Bohemia, to his family; he ordered the field to be conſecrated, attended the funerals of the noblemen who had loſt their lives in the battle, and ordered the common ſoldiers to be interred with great decency. Such acts of humility and moderation, doubtleſs ſerve to dignify the character of a monarch, and perhaps to quiet any ſcruples of conſcience that might intervene: but a prince ought to be very well ſatisfied with the juſtneſs of his quarrel, before he begins to ſhed ſuch ſeas of blood, and commences the miniſter of horror, death, ruin, and deſolation. Edward laid claim to the crown of France, to which he certainly had no right; and this whole campaign was employed in ravaging the lands, burning the habitations, and butchering the perſons of the people over whom they wanted to rule.

CREST, in heraldry, the uppermoſt part of an armoury, or that part of the caſque or helmet next to the mantle.

CREST, among carvers, an imagery,

or carved work, to adorn the head, or top of any thing, like our modern corniche.

CREST-FALLEN, a fault of an horſe, when the upper part of his neck, called the creſt, hangs to one ſide: this they cure by placing it upright, clipping away the ſpare ſkin, and applying plaſters to keep it in a proper poſition.

CHETA, chalk, in natural hiſtory. See *Chalk*.

* CREUSA, in fabulous hiſtory, the daughter of Creon, king of Corinth, was married to Jaſon, which ſo enraged Medea, his caſt-off wife, that ſhe deſtroyed ſeveral of the royal family by her incarnations.

* CREUSA, in fabulous hiſtory, daughter to Priam, king of Troy, was wife to Æneas, with whom ſhe eſcaped at the burning of that city; but he loſt her as they were making their way to embark, when ſhe was carried away by the goddeſs Cybele.

CRIBATION, in pharmacy, the paſſing any ſubſtance through a ſieve, or ſearce, to ſeperate the finer particles from the groſſer, whereby the body be dry, and reduced to powder, as the pulps of ſeeds, fruits, or roots.

CRICKET, in zoology, the gayllus. See *Gayllus*.

CRICOIDES, in anatomy, a cartilage of the larynx, called alſo the annular cartilage.

CRICOTHYROIDÆUS, in anatomy, one of the five proper muſcles of the larynx, which ariſe and terminate in it. It ſerves occaſionally either to dilate or conſtringe the glottis.

CRIME, *Crimen*, the tranſgreſſion of a law, either natural or divine, civil or eccleſiaſtic.

CRIMSON. One of the ſeven red colours of the dyers. See *Colour*.

CRISIS, in medicine, is uſed in various ſenſes, both by the antient and modern phyſicians. With ſome it means frequently no more than the excretion of any noxious ſubſtance from the body. Others take the word for a ſecretion of the noxious humours made in a fever. Others uſe it for the critical motion itſelf; and Galen deſcribes a criſis in fevers, a ſudden and inſtantaneous change, either for the better or the worſe, productive of recovery or death.

CRISP LEAF, among botaniſts, one folded over and over, at the edges, which are always ſerrated, dentated, or lacerated. It is otherwiſe called curled.

CHRISTA GALLI, in anatomy, a proceſs of the os ethmoides, making the upper part of the ſeptum narium.

CRITHE, in ſurgery, ſtyle, a tubercle that grows in different parts of the eyelids. When it is ſmall it comes only to the edge of the eyelids, or very near it, between the cilia; but when it is large it ſpreads towards the middle of the lid. The cure of this diſeaſe muſt be varied, according as the chrithe is attended with an inflammation or is hardened and concreted.

CRITHMUM, ſamphire, in botany, a genus of plants more uſed as a pickle, than for any medicinal purpoſes: however, it is ſuppoſed to ſtrengthen the ſtomach, provoke urine, and open obſtructions of the bowels.

CRITICAL DAYS and SYMPTOMS, among phyſicians, are certain days and ſymptoms, in the courſe of acute diſeaſes, which indicate the patient's ſtate, and determine him either to recover or grow worſe.

CRITICISM, the art of judging with propriety concerning any diſcourſe or writing. Though the uſe of the word is ordinarily reſtrained to literary criticiſm, we may diſtinguiſh divers other branches of this art; as 1. Philoſophical criticiſm, the art of judging of the hypotheſes and opinions of philoſophers. 2. Theological criticiſm, the art of judging of the means of governing, acquiring, and preſerving ſtates. 4. Grammatical criticiſm, the art of interpreting the words of an author, &c. In ſhort, the art of criticiſm, though reckoned by ſome as the diſtinct part of philoſophy, is nothing elſe than a more correct and accute knowledge in the other parts of it; and a readineſs to apply that knowledge upon all occaſions, in order to judge well of what relates to theſe ſubjects, to explain what is obſcure in authors, to ſupply what is defective, amend what is erroneous in manuſcripts or ancient copies, to correct the miſtakes of authors and editors in the ſenſe of the words, to reconcile the controverſies of the learned, and by theſe means to ſpread a juſter knowledge of the beautiful paſſages and ſolid reaſoning of authors, among the inquiſitive part of mankind.

CROCHES, among hunters, the little buds growing about the tops of a dear or hart's horns.

CROCODILE, *Crocodilus*, in zoology, a ſpecies of lizard, with a two-edged tail and triangular feet, the fore ones having five, and the hinder ones only four toes. This is the largeſt of the lizard kind, growing to twenty-five feet in length, and about the thickneſs of a man's body. It is a native of the torrid zone frequenting ſalt-water rivers, where it lies concealed among the reeds or ruſhes, till it finds an opportunity to ſeize men or other animals, which it drags into the water, always taking this method of drowning them firſt, that it may afterwards devour them without reſiſtance: its general food, however, is fiſh. The Africans and Indians eat its fleſh, which is white, and of a kind of perfumed flavour.

CROCUS, ſaffron, in botany, a genus of plants, with narrow graſs-like leaves, which have a white line running along the middle: the ſtalk is ſhort and undivided, and bears on the top a purpliſh blue flower, deeply cut into ſix ſegments: in the middle of the flower ariſes, among the ſtamina, a whitiſh piſtil, divided at the top into three chives or fleſhy filaments, the lower part of which is ſlender and pale-coloured, the upper broader, of a deep orange red, and very finely indented about the ſides: theſe filaments, carefully picked, and preſſed together into cakes, are the ſaffron of the ſhops. The plant is perennial, and flowers in autumn: the common ſpring crocuſes of our gardens are reckoned by Linnæus to be no other than varieties of it. Saffron is cultivated in different parts of the world: that produced in England is greatly ſuperior to the ſorts brought from abroad, and may be diſtinguiſhed from them by its blade being made broader. It ſhould be choſen freſh, not above a year old, in cloſe cakes, neither dry nor yet very moiſt, tough and firm in tearing, of a high fiery colour, and of the ſame colour within as on the outſide.

Saffron is a very elegant and uſeful aromatic: of a ſtrong penetrating, diffuſive ſmell, and a warm, pungent, bitteriſh taſte. It is ſuppoſed to have a conſiderable degree of anodyne power, depending on its ſubtile odorous principle; to be more cordial and more exhilirating than almoſt any other of the aromatics, ſo as, when taken too freely, to occaſion even immoderate mirth; to be particularly ſerviceable in diſorders of the breaſt, in female obſtructions, and hyſteric depreſſions. It tinges the urine of a high colour. The doſe is commonly from two or three grains to ten or twelve: Geoffroy ſays it may be extended with ſafety to a ſcruple and more.

The officinal tinctures are made with ſack or French brandy, in the proportion of an ounce to a pint; by diſſolving in the vinous tincture a proper quantity of fine ſugar, twenty-five ounces to a pint, an elegant cordial ſyrrup is obtained. Tinctures drawn with vinegar, or other liquors ſenſibly acid, ſoon looſe of their rich colour in keeping: the colour of the vinous tinctures alſo fades a little, and a part of the diſſolved ſaffron is apt to be in time thrown off: thoſe made in proof ſpirit, and in rectified ſpirit, particularly the latter, may be kept in perfection for years.

CROCUS, in chemiſtry, any metal calcined to a deep or yellow colour: thus we meet with crocus martis aperiens & aſtringens, or the aperient and aſtringent crocuſes of iron; alſo with the crocus veneris, or copper calcined to ſuch a reddiſh powder.

CROCUS METALLORUM, an emetic preparation of antimony and nitre thus made: Take an equal quantity of each, powder them ſeparately, then mixing them well together, throw the mixture, by degrees into a red-hot crucible, where it is to remain till melted thoroughly: this, after being ſeparated from the ſcoriæ, is to be kept for uſe. By boiling this crude crocus, firſt reduced to a fine powder, in water, and afterwards waſhing it with more hot water, till it comes off inſipid, is obtained the waſhed crocus of antimony.

CROFT, a little cloſe or field, adjoining to a dwelling-houſe, and encloſed for paſture or arable land.

CROISADE, CRUSADE, or CRUZADO, a name given to the expeditions of the Chriſtians againſt the infidels, for the conqueſt of Paleſtine; ſo called becauſe thoſe who engaged in the undertaking, wore a croſs on their cloaths, and bore one on their ſtandard.

CROISSANTE, in heraldry, is ſaid of a croſs, the ends of which are faſhioned like a creſcent or half-moon.

* CROMWELL, (THOMAS) earl of Eſſex, an eminent ſtateſman in the ſixteenth century, was the ſon of a blackſmith at Putney, near London, who was in his latter days a brewer. He was educated in a private ſchool, where he learned accounts, and a little Latin; but afterwards travelling, he ſeized the opportunity of learning ſeveral languages. Coming to Antwerp, where was then a conſiderable Engliſh factory, he was retained to be their clerk; and afterwards he embraced an opportunity that offered in 1510, of taking a journey to Rome. While he remained in Italy, he ſerved for ſome time as a ſoldier under the duke of Bourbon: and at Bologna aſſiſted John Ruſſel, afterwards earl of Bedford, in making his eſcape, when he was in danger of being taken by the French. On his return from his travels, he was taken into the

ſervice of cardinal Wolſey; who, obſerving his great parts made him his ſolicitor, and often employed him in affairs of great importance. In return for theſe favours, Cromwell defended his maſter in the houſe of Commons, of which he was then a member, with great wit and eloquence. After the Cardinal's death, he was taken into the King's ſervice. In 1531, he was knighted, made maſter of the king's jewel-houſe, and a privy-counſellor. The next year he was made clerk of the hanaper, and chancellor of the exchequer. In 1534, he was made principal ſecretary of ſtate, and maſter of the rolls; and the next year appointed viſitor-general of the monaſteries throughout England, in order for their ſuppreſſion. In 1536, he was made lord-keeper of the privy ſeal, when he reſigned his maſterſhip of the rolls. The ſame year he was advanced to the dignity of a baron, by the title of Cromwell, lord Oakham, in Rutlandſhire; and alſo made vicar-general, and vicegerent over all the ſpiritualities under the king, who was declared ſupreme head of the church. Having been highly inſtrumental in promoting a reformation, and pulling down the monaſteries, he was, in 1539, rewarded with many noble manors belonging to thoſe diſſolved houſes; and, on the 17th of April, the ſame year, was advanced to the dignity of earl of Eſſex. At length, uſing his utmoſt endeavours to procure a marriage between king Henry the Eighth, and Anne of Cleves, whoſe friends were Lutherans, as the moſt effectual method to ſecure both himſelf and the proteſtant religion, this very ſtep produced his deſtruction; for the king, not liking the queen, took an invincible averſion to Cromwell, and ſeveral articles being brought againſt him, reſolved to give him up; and having cauſed him to to be arreſted at the council-table, ſent him to the Tower: when a bill of attainder having paſſed both houſes, he was brought to a ſcaffold, on Tower-hill, where he was beheaded, on the 28th of July, 1540. Thus fell Thomas lord Cromwell, though it was ſaid there was not a man in England who poſſeſſed ſo many virtues.

* **CROMWELL, (OLIVER)** lord protector of England, one of the greateſt generals and politicians that this country has produced, was the ſon of Robert Cromwell, the ſecond ſon of Sir Henry Cromwell of Hinchinbrooke, in the county of Huntingdon, knight, and was born at Huntingdon the 24th of April 1599. He ſtudied ſome time at Sydney college, Cambridge, and afterwards removed to Lincoln's Inn, London, after which he married, and ſettled at Huntingdon till the death of his uncle ſir Thomas Stuart, who left him an eſtate of between four and five hundred pounds a year, which induced him to remove to the iſle of Ely, about which time he began to leave the church and converſe with the puritans. He was elected a member of the third parliament of king Charles I. which met January 20, 1628; and having ſpent part of his eſtate in returning ſums of money he had formerly won at play, reſolved in 1637 to go and ſettle with his wife and family in New England, but was ſtopped by a proclamation for reſtraining ſuch embarkations. He was afterwards choſen member for Cambridge in the long parliament. As ſoon as the parliament formed ſchemes of raiſing forces for their ſervice, which was at the beginning of the year 1642, he immediately went to Cambridge, where he raiſed a very good troop of horſe; and having ſoon taken a large quantity of arms and ammunition from the royaliſts, he encreaſed his forces, and was in a ſhort time at the head of a thouſand horſe, with the title of colonel Cromwell. Cromwell being very active in the parliament's ſervice, was ſoon after appointed lieutenant-general of horſe under the earl of Mancheſter, who joining the Scots, enabled them to reduce York: and in the battle of Marſton-Moor it is unanimouſly agreed that Cromwell's cavalry, who were commonly ſtyled Ironſides, changed the fortune of the day. Cromwell's reputation encreaſing, he was appointed lieutenant-general of the army, when after ſeveral victories he gained the battle of Naſeby; and this, with other ſucceſſes, ſoon put an end to the war. In ſhort, the unhappy king was delivered up by the Scots. Cromwell and the parliament entered into a treaty with him; but that prince's ſecret deſigns being diſcovered by Cromwell's vigilance, and that of his ſpies, he found his own ſafety made it neceſſary to change his conduct. After various turns the king was brought to his trial, Cromwell himſelf being one of the high court of juſtice, and principally concerned in his death. The houſe of lords was now declared uſeleſs, and a council of ſtate appointed to govern the nation. Cromwell, after quelling ſeveral mutinies in his army, was, in the year 1649, ſent general into Ireland, when in about nine months he ſubdued almoſt that whole kingdom, and leaving his ſon Ireton to complete the conqueſt, returned to England, where he was made general in the room of lord Fairfax. He then went to

Scotland, routed the Scots army at Dunbar, took Edinburgh, Leith, and other places, purſued king Charles II's army to England, defeated it at Worceſter, September 3, 1651, and returned to London, where the parliament ſettled four thouſand pounds a year upon him. He began now to complain of the long parliament, which on the 20th of April, 1653, he diſſolved by force, and two days after publiſhed a declaration of his reaſons, ſigned by himſelf and his council of officers. July 4, he called a parliament, and by an inſtrument conſtituted them the ſupreme authority; and on the 13th of December following, they reſigned their powers to him, and an inſtrument of government was drawn up, by which he was declared lord protector of the common wealth of England, Scotland, and Ireland, and December 16 he was inſtalled. He now applied himſelf to the management of the ſeveral parties; he ſupplied the benches of the courts of Weſtminſter with the ableſt lawers, but acted in the moſt arbitrary and oppreſſive manner, where his own intereſt was concerned. He however made himſelf feared and courted by all the powers of Europe; and having raiſed the glory of England to its higheſt pitch, died on the third of September 1658, in the ſixtieth year of his age.

* CROMARTIE, (Earl of,) was beheaded on Tower-hill for treaſon, in 1746.

CROSIER, ar CROZIER, a ſhepherd's crook; a ſymbol of paſtoral authority, conſiſting of a gold or ſilver ſtaff, crooked at the top, carried occaſionally before biſhops or abbots, and held in the hand when they give the ſolemn benedictions. The cuſtom of bearing a paſtoral ſtaff before the biſhops is very ancient. Regular abbots are allowed to officiate with a mitre and croſier. Among the Greeks none but a patriarch had a right to a croſier.

CROSIER, in aſtronomy, four ſtars in the ſouthern hemiſphere, in the form of a croſs, ſerving thoſe who ſail in ſouth latitudes to find the antarctic pole.

CROSLET, in heraldry, is when a croſs is croſſed again at a ſmall diſtance from each of the ends.

CROSS, *Crux*, in antiquity, a ſpecies of puniſhment, or rather the inſtrument wherewith it was inflicted; conſiſting of two pieces of wood croſſing each other.

CROSS, in heraldry, an ordinary compoſed of four-fold lines, whereof two are perpendicular, and the other two tranſverſe; for ſo we muſt conceive of them, though they are not drawn throughout, but meet by couples, in four right angles, near about the feſſe-point of the eſcutcheon.

CROSS-JACK, in naval affairs, a ſail extended on the lower-yard of the mizen-maſt, called hence the croſs-jack yard. This ſail is very ſeldom uſed.

CROSSELET, a little or diminitive croſs, uſed in heraldry, where the ſhield is frequently ſeen covered with croſſelets; alſo feſſes and other honourable ordinaries, charged or accompanied with croſſelets. Croſſes frequently terminate in croſſelets.

CROTAPHITES, in anatomy, a muſcle of the lower jaw, ſerving to draw it upwards.

CROTCHES, in naval architecture, certain crooked timbers in the after-hold, on which to form the narrower parts of a ſhip as ſhe approaches to the ſtern.

CROTCHES, certain crooked pieces of wood or iron, fixed in different places of the ſhip in order to ſupport the ſpare maſts, &c.

CROTCHET, in muſic, one of the notes or characters of time, marked thus ♩, equal to half a minim, and double of a quaver. See *Character*, *Minim*, and *Quaver*. A dot added to the crochet increaſes its time by one half, that is, makes it equal to a crotchet and a half.

CROTCHET, in printing, a ſort of ſtrait or curved line, always turned up at each extreme: ſerving to link ſuch articles as are to be read together; and uſed in analytical tables, &c. for facilitating the diviſions and ſubdiviſion of any ſubject, generally expreſſed thus }

CROCHETS are alſo marks or characters, ſerving to incloſe a word or ſentence, which is diſtinguiſhed from the reſt, being generally in this form [ ] or this ( ).

CROUP *of a Horſe*, in the menage, the extremity of the reins above the hips.

CROUPADE, in the menage, a leap, in which the horſe pulls up his hind legs, as if he drew them up to his belly. Croupades differ from caprioles and balotades, in this, that in croupades the horſe does not jerk, as he does in the other two airs.

CROW, in ornithology, a ſpecies of corvus, about the ſize of the largeſt tame pigeon, and of a fine deep black colour, with large eyes and reflex briſtles at the noſtrils.

Royſten CROW, another ſpecies of corvus, with the body grey, the head, throat, wings, and tail, black.

CROW, in mechanics, an iron lever with a claw at one end, and a ſharp point at the other; uſed for heaving great weights.

CROW's Bill, among ſurgeons, a kind of forceps for drawing bullets, &c. out of wounds.

CROW's FEET, in the military art, machines of iron, having four points each about three or four inches long, ſo made that whatever way they fall, there is ſtill a point up: they are thrown upon breaches or in paſſes where the enemy's cavalry are to march, proving very troubleſome by running into the horſe's feet and laming them.

CROWN, an ornament worn on the head by kings, ſovereign princes, and noblemen, as a mark of their dignity. The Roman emperors had four kinds of crowns, ſtill ſeen on medals, a crown of laurel, a radial or radiating crown, a crown adorned with pearls and precious ſtones, and the fourth a kind of bonnet or cap, ſomething like the mortier. The Romans had alſo various kinds of crowns, which they diſtributed as rewards of military atchievements; as, 1. The oval crown, made of myrtle, and beſtowed upon generals who were entitled to the honours of the leſſer triumph, called ovation. 2. The naval or roſtral crown, compoſed of a circle of gold, with ornaments repreſenting beaks of ſhips, and given to the captain who firſt grappled, or the ſoldier who firſt boarded, an enemy's ſhip. 3. The crown, called in Latin, vallaris, or caſtrenſis, a circle of gold raiſed with jewels or paliſades; the reward of him who firſt forced the enemy's intrenchments. 4. The mural crown, a circle of gold indented and embattled; given to him who firſt mounted the wall of a beſieged place, and there lodged a ſtandard. 5. The civic crown, made of the branch of a green oak, and given to him who had ſaved the life of a citizen. 6. The triumphal crown, conſiſting at firſt of wreaths of laurel, but afterwards made of gold; proper to ſuch generals as had the honour of a triumph. 7. The crown called obſidionalis, or graminea, made of graſs growing on the place; the reward of a general who had delivered a Roman army from a ſiege. 8. The crown of laurel, given by the Greeks to their athletæ; and by the Romans to thoſe who had negociated or confirmed a peace with an enemy: this was the leaſt honourable of all.

CROWN, in heraldry, is uſed for the repreſentation of that ornament, in the mantling of an armory, to expreſs the dignity of perſons.

The Imperial CROWN is a bonnet or tiara, with a ſemi-circle of gold, ſupporting a globe with a croſs at top. See plate XVI. *fig.* 1. No. 1.

The Britiſh CROWN is adorned with four croſſes, between which there are four fleurs de lis: it is covered with four diadems, which meet at a little globe ſupporting a croſs. See *fig.* 1. No. 2.

The French CROWN, is a circle of eight fleurs de lis, encompaſſed with ſix diadems, bearing at top a double fleur de lis, which is the creſt of France. See *fig.* 1. No. 3.

The Spaniſh CROWN is adorned with large indented leaves, and covered with diadems terminating in a globe, ſurmounted with a croſs. See *fig.* 1. No. 4.

The crowns of almoſt all other kings are adorned with large leaves, bordered with four, ſix, or eight diadems, and with a globe and croſs at top.

The Papal CROWN is compoſed of a tiara and a triple crown encompaſſing it, with two pendants like the biſhop's mitres. Theſe crowns repreſent the pretended triple capacity of the pope, a high-prieſt, ſupreme judge, and ſole legiſlator of Chriſtians. See *fig.* 1. No. 5.

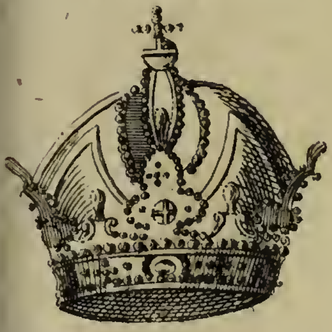
An Electoral CROWN, or coronet, is a ſcarlet cap turned up with ermine, and cloſed with a ſemicircle of gold, all covered with pearls, with a globe at top, ſurmounted with a golden croſs. See *fig.* 1. No. 6.

CROWNS *of the Britiſh Princes of the Blood.* 1. The prince of Wales's crown conſiſts alternately of croſſes and fleurs de lis, with one arch, in the middle of which is a ball and croſs, as in the royal diadem. 2. That of all the younger ſons and brothers of the king, conſiſts likewiſe of croſſes and fleurs de lis alternately, but without any arch, or being ſurmounted with a globe and croſs at top. 3. That of the other princes of the blood conſiſts alternately of croſſes and leaves like thoſe in the coronet of dukes, &c. See *fig.* 2.

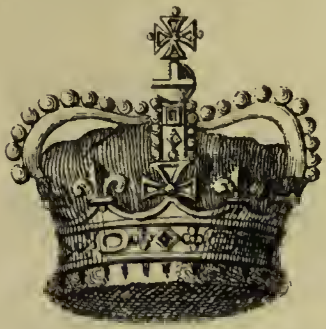
CROWNS *of Noblemen*, are a duke's, compoſed of leaves of ſmallage, or parſley: that of a marquis, of flowers and pearls placed alternately: an earl has no flowers about the circle, like the duke and marquis, but only points riſing, and a pearl on every one of them: a viſcount has neither flowers nor points raiſed above the circle, like the other ſuperior degrees, but only pearls placed on the circle itſelf without any limited number: a baron has only ſix

ROYAL CROWNS.

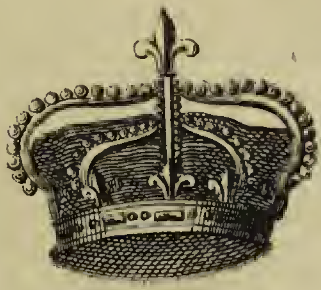
N°1. *Imperial.*



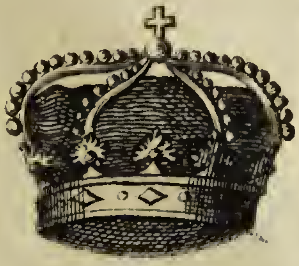
N°2. *British.*



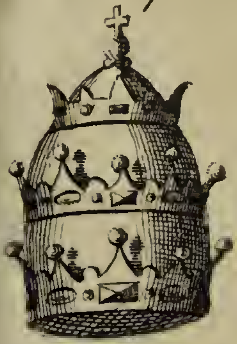
N°3. *French.*



N°4. *Spanish.*



N°5. *Papal.*



N°6. *Electoral.*

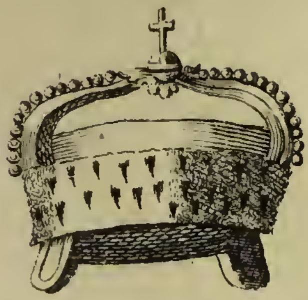
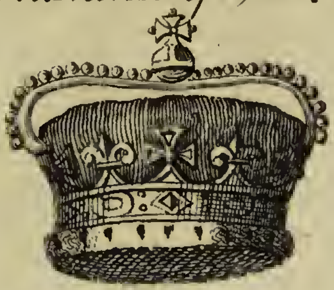


Fig. 2. CROWNS of the Blood Royal of Great Britain.

N°1. *Prince of Wales.*



N°2. *Younger Sons*

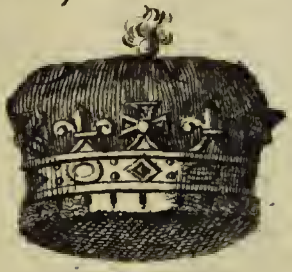
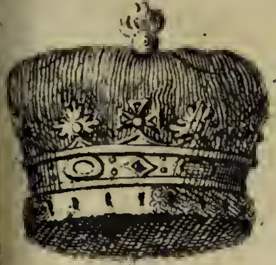
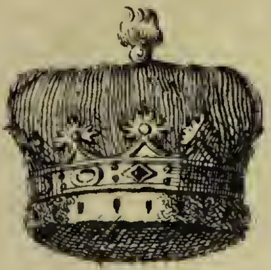


Fig. 3. CROWNS of NOBILITY.

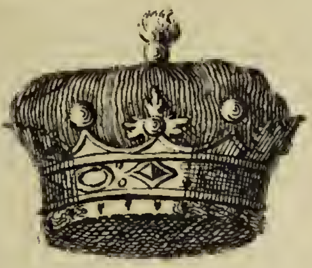
N°3. *Nephews.*



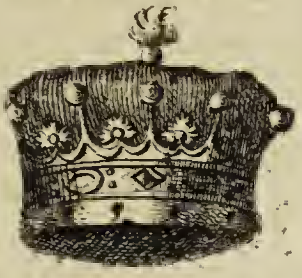
N°1. *Dukes.*



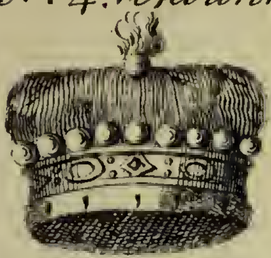
N°2. *Marquis's.*



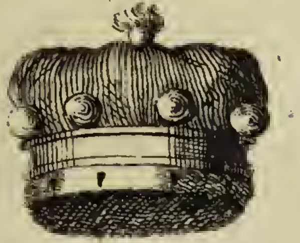
N°3. *Earls.*



N°4. *Viscounts.*



N°5. *Barons.*



pearls on the golden border, not raiſed, to diſtinguiſh him from the earls: and the number of them limited, to ſhew he is inferior to the viſcount. See *fig.* 3.

CROWN, in commerce, a general name for coins both foreign and domeſtic, which are of, or near, the value of five ſhillings ſterling. See *Coin.*

CROWN, in architecture, the uppermoſt member of the cornice, called alſo corona, and larmier. See *Corona* and *Larmier.*

CROWN, in aſtronomy, a name given to two conſtellations, the one called borealis, the other meridionalis. See *Corona.*

CROWN, in geometry, a plane ring included between two concentric perimeters, and is generated by the motion of ſome part of a right line round a center, the ſaid moving part not being contiguous to the center.

The area of a crown will be had by multiplying its breadth by the length of the middle periphery; for a ſeries of terms in arithmetic progreſſion being $n \times \frac{a+w}{2}$; that is, the ſum of the firſt and laſt multiplied by half the number of terms, the middle element muſt be $\frac{a+w}{2}$; wherefore that multiplied by the breadth, or ſum of all the two terms, will give the crown.

CROWN *of Colours,* certain coloured rings which like halos appear about the body of the ſun or moon, but of the colours of the rainbow, and at a leſs diſtance than the common halos. Theſe crowns Sir Iſaac Newton ſhews to be made by the ſun's ſhining in a fine day, or the moon in a clear night, through a thin cloud of globules of water or hail, all of the ſame bigneſs.

CROWN-OFFICE, an office belonging to the King's bench-court, of which the king's coroner or attorney is commonly maſter. In this office, the attorney-general and clerk of the crown exhibit informations for crimes and miſdemeanors at common law, as in the caſe of batteries, conſpiracies, libelling, &c. on which the offender is liable to pay a fine to the king.

CROWN-GLASS, the fineſt ſort of window-glaſs. See *Glaſs.*

CROWN-WORK, in fortification, an out-work having a very large gorge, generally the length of the curtain of the place, and two long ſides terminating towards the field in two demi-baſtions, each of which is joined by a particular curtain to a whole baſtion, which is the head of the work. The crown-work is intended to incloſe a riſing ground, or to cover the head of a retrenchment.

CROWNING, in architecture, any thing that finiſhes a decoration. Thus a corniche, a pediment, a croteria, are called crownings.

CRUCIBLE, a chemical veſſel made of earth, and ſo tempered and baked as to endure the greateſt heat, uſed to melt metals, to flux minerals, ores, &c.

CRUCIFIX, a croſs upon which the body of Chriſt is faſtened in effigy, uſed by the Roman catholics to excite in their minds a ſtrong idea of our Saviour's paſſion.

CRUCIFORM, ſomething diſpoſed croſs-wiſe; but more eſpecially uſed by botaniſts, for flowers conſiſting of four petals diſpoſed in the form of a croſs: ſuch are the flowers of cabbage, rocket, wall-flower, &c. See *Flower.*

CRUDE, ſomething that has not paſſed the fire, or had a proper degree of coction.

CRUDITY, among phyſicians, undigeſted ſubſtances in the ſtomach; humours in the body which are unconcocted, and not prepared for expulſion. There are two remarkable crudities in the ſtomach, the acid and nidoroſe. The firſt is when the aliments turn into a fixed acid liquamen more or leſs viſcid, being not ſufficiently attenuated and volatilized, which is the origin of chronical diſeaſes. An acid crudity diſcovers itſelf by the heart-burn, by acid eructations in abundance, and by coſtiveneſs. It is corrected by abſorbent and alkaline medicines, by volatile aromatics, &c. after which cathartics may be given: for if this method be not obſerved, purging medicines will not make their proper evacuations, but only cauſe gripings and ſpaſms in the bowels. A nidoroſe crudity is when the aliments are ſo far corrupted, that they are turned into a putrilaginous liquamen of a very unſavory taſte and ſmell, which is called a nidor. It is attended with fetid eructations ſomething like the ſmell of fried eggs, or ſtinking fiſh; and very often with the heart-burn, and a ſort of nauſea riſing into the mouth from the ſtomach. With relation to the cure, an emetic ſhould be given, or leaſt the body gently purged with rhubarb and tamarinds, after which acidulated juleps are good. The crudity of the humours or morbific matter in a diſeaſe, is diſcovered chiefly from a fault in the quantity or quality of the circulating as well as the ſecreted ed humours, as of ſweat, mucus, ſaliva, urine, pus, blood, &c.

CRUOR, among anatomiſts, ſometimes ſignifies the blood in general; ſometimes only the venous blood; and ſometimes extravaſated, or coagulated blood.

CRUPPER, in the manege, the buttocks of a horſe, the rump; alſo a thong of leather put under a horſe's tail, and drawn up by thongs to the buckle behind the ſaddle, ſo as to keep him from caſting the ſaddle forwards on his neck.

CRURÆUS, or CRUREUS MUSCULUS, in anatomy, a fleſhy maſs, covering almoſt all the foreſide of the os femoris, between the two vaſti, which likewiſe cover the edges of this muſcle on each ſide.

CRURAL, in anatomy, an epithet given to the artery which conveys the blood to the crura, or legs, and to the vein by which this blood returns towards the heart.

CRUS, in anatomy, that part of the body between the buttocks and the toes; it is divided into the thigh, leg, and foot. See *Thigh*, *Leg*, and *Foot*.

CRUSTACEOUS, an appellation given to animals covered with ſhells made up of ſeveral pieces, in contradiſtinction to thoſe conſiſting of a ſingle piece, called teſtaceous.

CRUZADO, in commerce, a Portugueſe coin; ſtruck under Alponſus V. about the year 1457, when pope Calixtus ſent thither the bull for a croiſade againſt the infidels.

CRYPTOGRAMIA, one of Linnæus's claſſes of plants, the organs of fructification of which are either concealed within the fruit itſelf, or ſo minute as to eſcape obſervation. To this genus belong the moſſes, muſhrooms, ferns, liver-worts, &c.

CRYPTOGRAPHY, the art of writing in cipher, or with ſympathetic ink. See *Cipher* and *Ink*.

CRYSTAL, in natural hiſtory, the name of a very large claſs of foſſils; hard, pellucid, and naturally colourleſs; of regularly angular figures, compoſed of ſimple, not filamentous plates; not flexible nor elaſtic, giving fire with ſteel; not fermenting in acid menſtrua, and calcining in a ſtrong fire.

CRYSTAL, is uſed for a factitious body, caſt in glaſs-houſes, called cryſtal-glaſs; being no more than glaſs carried, in the compoſition and manufacture, to a greater perfection than the common glaſs.

CRYSTALS, in chemiſtry, ſalts or other matters congealed, in the manner of cryſtal.

CRYSTALS *of Silver, or Lunar Cryſtals*, are ſilver reduced into the form of ſalts, by the pointed acids of ſpirit of nitre. Theſe cryſtals are like the ſolutions of an immediate cauſtic; they burn the ſkin on the ſlighteſt touch.

CRYSTALLI, among phyſicians eruptions about the ſize of a lupin, white and tranſparent, which ſometimes break out all over the body.

CRYSTALLINE, compoſed of, or reſembling cryſtal. See *Cryſtal*.

CRYSTALLINE HUMOUR, in anatomy, a thick, compact humour, in form of a flattiſh convex lens, ſituated in the middle of the eye, ſerving to make that refraction of the rays of light, neceſſary to make them meet in the retina, and form an image thereon, whereby viſion may be performed. See *Eye*.

CRYSTALLIZATION, in chemiſtry, the reducing ſalts to their proper ſpecific or cryſtalline form. To underſtand this definition, it is neceſſary previouſly to know, that it is a property of all kinds of ſalts, when diſſolved in ſuch a quantity of water as is not ſufficient to keep them in that ſtate, and prevent their coaleſcence, to form themſelves into ſimilar figures of a peculiar kind, each according to its ſpecies; and theſe having, in ſeveral inſtances, the exact reſemblance of cryſtals, gave occaſion to their borrowing that name. Saturation is affected by the difference of the quantities of ſalts which hot and cold water will diſſolve.

The intentional end of cryſtallization is to render the ſalts pure and diſtinguiſhable, as well by freeing them from feculencies, and giving them their proper form, as by ſeparating each kind from every other with which it may happen to be mixed. This it effectuates completely, if well executed; and it is attended with this particular advantage, that in this ſtate the ſpecies of any ſalt may certainly be diſtinguiſhed, in general, by the appearance only. The manner of performing it is, to make a ſaturate ſolution of the ſalts in boiling water, either by adding the ſalts, if dry, to the water; or by evaporating the redundant water, if they were before diſſolved, and then putting the ſolution into a proper veſſel, and ſuffering it to reſt in a cool place till the cryſtals are formed, which is perfected in a longer or ſhorter time, according to the degree of heat or cold of the weather. This is all that is neceſſary when the ſalts are pure; but if they are mixed with any heterogeneous matter, or feculencies, it is requiſite, that, before the ſolution is ſet to ſhoot, filtration ſhould be uſed.

There is no particular form neceſſary for the veſſels which are employed in cryſtallization, provided they be ſuch that the cryſtals may be commodiouſly taken out. But it is very proper to have regard to the ſubſtance of which they are made, as well in reſpect of thoſe uſed for the ſolution, as thoſe for the cryſtallization; otherwiſe a corroſion of the veſſel, and conſequent depravation of the ſalts, or an unneceſſary waſte thereof, will frequently happen.

CRYSTALLOIDES, the cryſtalline tunic of the eye; a fine membrane containing the cryſtalline humour.

CUB, a bear's whelp. Among hunters, a fox and marten of the firſt year, are called cubs.

* CUBA, an iſland of North America, at the entrance of the gulph of Mexico, about three hundred and ſixty miles long, and ninety broad. Chriſtopher Columbus diſcovered it the ſecond voyage he made to America. The air is pretty wholeſome, and not exceeding hot. The country is full of mountains, foreſts, and lakes, and yet is tolerably fruitful in ſeveral places, eſpecially near the ſhore. They have a particular ſort of tree, called caninga, whoſe bark has the taſte of cinnamon and cloves, which ſerves the inhabitants for ſpice. Some of the cedars are ſo large, that they ſerve to make canoes, which will hold forty or fifty men. The tortoiſes, or ſea-turtles, are ſo large and numerous, that the Spaniards make uſe of them to victual their fleet, when they are homeward bound. The trees and fruits which grow here are moſt of them common to the Weſt Indies; but they are remarkable for a particular ſort of tobacco, of which they make Havanna ſnuff. The ſhores abound with ſea fowl. They have a great number of alligators, which infeſt the rivers. Great numbers of cattle are killed only for their ſkins, and their fleſh is left to rot on the ground; though ſome of it is dried in the ſun, and is uſed in victualling ſhips. There are abundance of commodious harbours about the iſland; and one in particular, on the ſouth ſide, where an Engliſh admiral and general landed ſeveral thouſand men in 1741; but they going at an improper time, the rainy ſeaſon came on, which cauſed a mortality among the men, and forced the remainder to return to Jamaica without attempting any thing. It was, however, taken by the Engliſh, in July, 1761, but was reſtored to the Spaniards by the peace of 1763. St. Jago is called the capital of the iſland; but the Havannah is much more conſiderable, on account of its trade, and the annual rendezvous of the galleons on their return to Spain. Cuba is about one hundred and twenty miles ſouth of Florida, and ſeventy north of Jamaica.

CUBATURE *of a Solid*, in geometry, the meaſuring the ſpace contained in it; or finding the ſolid contents of it.

CUBE, in geometry, a ſolid body conſiſting of ſix equal ſquare ſides.

The ſolidity of any cube is found by multiplying the ſuperficial area of one of the ſides by the height.

CUBE, or CUBIC NUMBER, in arithmetic, that number which is produced by multiplying any number by itſelf, and then again the product by that number; as 27 is a cubic number, ſince 3 multiplying 3 produces 9; and again, 3 multiplying 9 produces 27.

CUBE, or CUBIC *Quantity*, in algebra, the third power in a ſeries of geometrical proportionals continued; as a is the root, aa the ſquare, and aaa the cube. All cubic numbers may be ranged into the form of cubes; as 8 or 27, whoſe ſides are 2 and 3, and their baſes 4 and 9; whence it appears, that every true cubic number, produced from a binomial root, conſiſts of theſe parts, viz. The cubes of the greater and leſſer parts of the root, and of three times the ſquare of the greater part multiplied by the leſſer, and of three times the ſquare of the leſſer multiplied by the greater, as,

$$\begin{array}{l}
aa+2ab+bb \\
a+b \\
\hline
aaa+2aab+abb \\
\qquad\quad aab+2abb+bbb \\
\hline
aaa+3aab+3abb+bbb
\end{array}$$

From hence it is eaſy to underſtand both the compoſition of any cubic number, and the reaſon of the method for extracting the cube root out of any member given. See the following article.

CUBE-ROOT *of any Number, or Quantity*, is ſuch a number or quantity, which, if multiplied into itſelf, and then the product thence ariſing by that number or quantity, being the cube-root, this laſt product ſhall be equal to the number or quantity whereof it is the cube-root; as 2 is the cube-root of 8; becauſe two times 2 is 4, and two times 4 is 8; and $a+b$ is the cube-root of $a^3+3aab+3abb+b^3$.

CUBEBS, *Cubebæ*, dried berries, greatly reſembling pepper, but furniſhed each with a ſlender ſtalk, whence they are called by ſome, *piper caudatum*. Cubebs are a warm ſpice, of a pleaſant ſmell, and a moderately pungent taſte. Their heat and pungency are weaker than thoſe of pepper, but of the ſame kind; and reſide, like thoſe of that ſpice, not in the volatile, but in the more fixed matter.

CUBIC *Hyperbola*, a figure defined by the equation $xy^2=a^3$; having two aſymptotes, and conſiſting of two hyperbolas lying in the adjoining angles of the aſymptotes, and not in the oppoſite angles, like the Apollonian hyperbola, being otherwiſe called by Sir Iſaac Newton, in his *Enumeratio Linearum Tertii Ordinis*, an hyperboliſmus of a parabola; and is the ſixty-fifth ſpecies of his lines, according to him.

CUBIC *Parabola*. See *Parabola*.

CUBIT, among the ancients, a long meaſure to the length of a man's arm, from the elbow to the tip of the fingers. Dr. Arbuthnot makes the Engliſh cubit equal to eighteen inches; the Roman cubit equal to 1 foot, 5,406 inches; and the cubit of the Scripture equal to 1 foot, 9,888 inches.

CUBITÆUS, in anatomy, the name of two muſcles, the one called cubitæus externus, being the firſt of the extenſor muſcles of the fingers, ariſes from the external extuberance of the humerus, and paſſing its tendon under the ligamentum annulare, is inſerted into the fourth bone of the metacarpus that ſuſtains the little finger: the other is the cubitæus internus, which ariſeth from the internal extuberance of the humerus, and upper part of the ulna, upon which it runs all along, till it paſſes under the ligamentum annulare, and is inſerted, by a ſtrong and ſhort tendon, into the fourth of the firſt order of the carpus.

CUBITUS, in anatomy, a bone of the arm, reaching from the elbow to the wriſt, called alſo the ulna.

CUBOIDES, or OS CUBOIDES, in anatomy, the ſeventh bone of the foot, ſo called from its reſembling a cube.

CUCKOO-FLOWER, in botany, a name ſometimes given a plant, more generally called cardamine, or lady's ſmock.

CUCULLARIS, in anatomy, a muſcle of the ſcapula, otherwiſe called trapezius, ariſing from the os occipitis, the ſpinoſe apophyſes of the neck, and of the ſeventh and eighth of the back, terminating at the ſpine of the ſcapula.

CUCULUS, the cuckoo, in ornithology, a genus of birds, of the order of the picæ. The common cuckoo is a bird of conſiderable beauty, which breeds with us, but does not remain the year.

Its head, neck, and back, are of a hoary colour, with ſome dark grey feathers; the wings are of a browniſh black, the the throat of an undulated fleſh colour, and the belly whitiſh. The colour of the female differs but very little from that of the male.

CUCUMBER, *Cucumis*, in botany, a genus of plants, whoſe characters are the following:

It hath a flower conſiſting of one ſingle leaf, which is bell-ſhaped and expanded towards the top, and cut into many ſegments; of which ſome are male or barren; having no embryo, but only a large ſtyle in in the middle, which is charged with the farina: others are female or fruitful, being faſtened to an embryo, which is afterwards changed into a fleſhy fruit, for the moſt part oblong and turbinated, which is divided into three or four cells incloſing many oblong ſeeds.

The way to raiſe cucumbers is ſo well and ſo generally known, that to give an account of it, is altogether unneceſſary.

Wild CUCUMBER, *Cucumis*, a warty, hairy, ſomewhat oval fruit, not above two inches in length: the fruit, when ripe, burſts on being touched, and throws out with violence its whitiſh juice and its black ſeeds. It is ſown annually, as all the preceding, in gardens. All the parts of the wild cucumber are ſtrongly purgative: the fruit appears to be ſomewhat more ſo than the root, and this than the leaves. The juice that iſſues ſpontaneouſly, or by the very light preſſure, on ſlitting the fruit when almoſt ripe, has an unpleaſant ſmell, and a very durable nauſeous bitter taſte, on ſtanding for a few hours, it parts into a thick matter, which ſettles to the bottom, and a thin watery fluid, which floats above; this laſt may be commodiouſly drained off, after the clearer part is decanted, by means of ſtripes of woollen cloth or ſkains of cotton laid over the ſides of the veſſel. The thick fecula, dried in the ſun or any other gentle heat, is a very ſtrong, irritating, but ſlow cathartic; and often operates likewiſe upwards. It remarkably raiſes the pulſe, and ſeems to kindle a degree of fever for a time: its uſe therefore is in cold indolent phlegmatic caſes; particularly in dropſies, in which it has ſometimes been given with ſucceſs after medicines of a milder kind had proved ineffectual. Two or three grains are in general a ſufficient doſe: in ſome caſes this quantity has acted violently; in others, five grains have procured plentiful evacuation, without much uneaſineſs or diſturbance to the conſtitution.

CUCURBIT, in chemiſtry, an earthen or glaſs veſſel, ariſing gradually from a wide bottom, and terminating in a narrow neck. This inſtrument is of great uſe in chemical diſtillations, digeſtions, and ſublimations.

Blind CUCURBIT, a ſmall inverted cucurbit, adapted to another in ſuch a manner, that the neck of the one is inſerted in that of the other. The veſſel called circulatory, is one of this kind.

CUCURBITA, the gourd, in botany, a genus of plants. See *Gourd*.

CUD ſometimes means the inſide of the throats in beaſts, and ſometimes the food that they keep there, and chew over again: from whence, to chew the cud ſignifies, to ponder, think, or ruminate upon a thing.

CUE, among comedians, an item, or inuendo, given to the actors on the ſtage, what, or when to ſpeak.

CUIRASSE, a piece of defenſive armour, made of plate, ſerving to cover the body, from the neck to the girdle, both before and behind.

CUIRASSIERS, cavalry armed with cuiraſſes, as moſt of the Germans are; the French have a regiment of cuiraſſiers: but we have had none in the Engliſh army, ſince the Revolution.

CULLIAGE, a barbarous practice, whereby the lords of manors anciently aſſumed a right to the firſt night of their vaſſals brides.

* CULLODEN, battle of, April 16, 1746. In the beginning of April, 1746, the duke of Cumberland began his march from Aberdeen; and on the twelfth, paſſed the deep and rapid river Spey, without oppoſition from the rebels, though a conſiderable number of them appeared on the oppoſite ſide. Why they did not diſpute the paſſage, is not eaſy to be conceived: but, indeed, from this inſtance of neglect, and their ſubſequent conduct, we may conclude, they were under a total infatuation. His royal highneſs proceeded to Nairn, where he received intelligence, that the enemy had advanced from Inverneſs to Culloden, about the diſtance of nine miles from the royal army, with intention to give him battle. On the ſixteenth day of April, the duke having made the proper diſpoſition, decamped from Nairn early in the morning, and after a march of nine miles, perceived the Highlanders drawn up in order of battle, to the number of eight thouſand men, in thirteen diviſions, ſupplied with ſome pieces of artillery. The royal army which were much more numerous, the duke immediately formed into three lines, diſpoſed in excellent order; and about one o'clock in the afternoon, the cannonading began. The artillery of the rebels was ill ſerved, and did very little execution; but that of the king's troops made dreadful havock among the enemy. Impatient of this fire, their front line advancing to the attack, about five hundred of the clans charged the duke's left wing with their uſual impetuoſity. One regiment was diſordered by the weight of this column: but two battallions advancing from the ſecond line, ſuſtained the firſt, and ſoon put a ſtop to their career, by a ſevere fire, that killed a great number. At the ſame time the dragoons under Hawley, and the Argyllſhire militia, pulled down a park wall and covered their right flank, and falling in among them ſword in hand, completed their confuſion. The French piquets on their left, did not fire a ſhot; but, ſtood in active during the engagement, and afterwards ſurrendered themſelves priſoners of war. An intire body of the clans marched off the field, in order, with their pipes playing: the reſt were routed with great ſlaughter, and their prince was with reluctance prevailed upon to retire. In leſs than thirty minutes, they were totally defeated, and the field covered with dead bodies. The road, as far as Inverneſs, was ſtrewed with dead bodies; and a great number of people, who, from motives of curioſity, had come to ſee the battle, were ſacrificed to the undiſtinguiſhing vengeance of the victors. Three thouſand rebels were ſlain on the field, and in the purſuit. The earl of Kilmarnock was taken; and in a few days lord Balmerino ſurrendered himſelf to one of the detached parties. The glory of the victory was fullied by the barbarity of the ſoldiers. They had been provoked by their former diſgraces to the moſt ſavage thirſt of revenge: not contented with the blood which was ſo profuſely ſhed in the heat of action, they traverſed the field after the battle, and maſſacred

ſacred thoſe miſerable wretches who lay maimed and expiring: nay ſome officers acted a part in this cruel ſcene of aſſaſſination: the triumph of low illiberal minds, uninſpired by ſentiments, untinctured by humanity. The vanquiſhed adventurer forded the river Neſs, and retired with a few horſe to Aird, where he conferred with old lord Lovat: then he diſmiſſed his followers, and wandered about a wretched and ſolitary fugitive among the iſles and mountains, for the ſpace of four months, during which he underwent ſuch a ſeries of dangers, hardſhips and miſery, as no other perſon ever outlived. Thus in one ſhort hour, all his hope vaniſhed, and the rebellion was intirely extinguiſhed. One would almoſt imagine, the conductors of this deſperate enterprize had conſpired their own deſtruction, as they certainly neglected every ſtep that might have contributed to their ſafety or ſucceſs. They might have oppoſed the duke of Cumberland at the paſſage of the Spey: they might have afterwards attacked his camp in the night, with a good proſpect of ſucceſs. As they were greatly inferior to him in number, and weakened with hunger and fatigue, they might have retired to the hills and faſtneſſes, where they would have found plenty of live cattle for proviſion, recruited their regiments, and been joined by a ſtrong reinforcement, which was actually in full march to their aſſiſtance. But they were diſtracted by diſſenſions and jealouſies; obeyed the dictates of deſpair, and wilfully devoted themſelves to ruin and death. When the news of the battle arrived in England, the whole nation was tranſported with joy, and extolled the duke of Cumberland as a hero and deliverer. Both houſes of parliament congratulated his majeſty on this auſpicious event. They decreed, in the moſt ſolemn manner, their public thanks to his royal highneſs, which were tranſmitted to him by the ſpeakers; and the commons, by bill, added five and twenty thouſand pounds per annum to his former revenue.

CULMIFEROUS *Plants*, in botany, ſuch plants as have a ſmooth jointed ſtalk, uſually hollow, and at each joint wrapped about with ſingle, narrow, ſharp-pointed leaves, and their ſeeds contained in chaffy-huſks, as wheat, barley, &c.

CULMINATION, in aſtronomy, the paſſage of any heavenly body over the meridian, or its greateſt altitude for that day.

CULPRIT. After an indictment, for any criminal matter, is read in court, the priſoner at the bar is aſked whether he is guilty, or not guilty, of the indictment? If he anſwers, not guilty, there is a replication by the clerk of the arraignments from the crown, by continuing the charge of the guilt upon him, which is expreſſed in the word culprit.

The term culprit is a contraction of the Latin *culpabilis* and the French *priſt*; importing that he is ready to prove the criminal guilty.

CULVERIN, in the military art, a large cannon, or piece of artillery. See *Cannon.*

CULVERTAILED, among ſhipwrights, ſignifies the faſtening, or letting, of one timber into another, ſo that they cannot ſlip out, as the carlings into the beams of a ſhip.

* CUMBERLAND, a county in the north of England, ſeparated from Scotland by Salway Frith and river. It is 75 miles in length, and 27 in breadth, and is ſaid to contain 14,820 houſes, and about 89000 inhabitants. It has one city, 14 market towns, 58 pariſhes, and ſends ſix members to parliament. Carliſle is the capital. There are mines which produce lapis calaminaris, coal, copper, and black lead.

CUMMIN, *Cuminum*, an umbelliferous plant, reſembling fennel, but much ſmaller. It is annual; a native of Egypt and Ethiopia; and cultivated in the iſlands of Scicily and Maltha, from whence we are ſupplied with the ſeeds.

Theſe ſeeds are accounted good carminatives and ſtomachics: but have now in great meaſure, given place, for theſe purpoſes, to medicines of a more grateful kind. Their principal uſe is in external applications, as a warm diſcutient and antiſeptic.

CUNEIFORM, in general an appellation given to whatever reſembles a wedge.

CUNEIFORM-BONE, in anatomy, the ſeventh bone of the cranium, called alſo os baſilare, and os ſphenoides. See *Spenoides-Os.*

CUNEIFORM-BONES, or OSSA CUNEIFORMA, are alſo three bones of the foot, all different in their ſizes, and articulated with the os naviculare, and with the three bones of the metatarſus, viz. thoſe which ſupport the great toe, the ſecond and the third.

CUNETTE, or CUVETTE, in fortification, a deep trench, about three or four fathoms wide, ſunk along the middle of a dry moat, to make the paſſage more difficult to the enemy.

CUNEUS, the wedge, in mechanics. See *Wedge*.

CUP, a veſſel of various forms and materials, chiefly uſed to drink out of.

CUP among botaniſts. See the article *Calyx*.

* CUPID, in pagan mythology, the god of love. The ancients give very different accounts of the origin of this little deity. The common opinion ſeems to have been that there were two Cupids, the one the ſon of Jupiter and Venus, whoſe delight it was to raiſe ſentiments of love and virtue; and the other the ſon of Mars and the ſame goddeſs, who inſpired baſe and impure deſires. The firſt of theſe, called Eros, or True Love, bore golden arrows, which cauſed real joy, and a virtuous affection; the other, called Anteros, had leaden arrows, that raiſed a paſſion founded only on deſire, which ended in ſatiety and diſguſt. Cupid was always drawn with wings, to repreſent his inconſtancy; and naked to ſhew that he has nothing of his own. He was painted blind, to denote that love ſees no fault in the object beloved; and with a bow and quiver of arrows, to ſhew his power over the mind. Sometimes he is crowned with roſes; ſometimes he is placed between Hercules and Mercury, to ſhew the prevalence of eloquence and valour in love; and at others is placed near Fortune, to ſignify that the ſucceſs of lovers depends on that inconſtant goddeſs.

CUPOLA, in architecture, a ſpherical vault; or the round top of the dome of a church, in form of a cup inverted. See *Dome*,

CUPPEL. See *Coppel*.

CUPPING, in ſurgery, the operation of applying cupping-glaſſes for the diſcharge of blood, and other humours, by the ſkin. The operation of cupping is not confined to any particular member of the body; but wherever the cupping-glaſs is applied, it is fixed upon the ſkin, either entire or ſcarified, and hence we have a two-fold diſtinction of cupping, into dry and gorey.

The uſe of dry-cupping is two-fold, either to make a revulſion of the blood, from ſome particular parts affected, or elſe to cauſe a derivation of it into the affected part, upon which the glaſs is applied.

Dry cupping is alſo uſed, with ſucceſs, to make a revulſion, by applying the glaſſes to the temples, behind the ears, or to the neck and ſhoulders, for the removal of pains, vertigoes, and other diſorders of the head: they are applied to the upper and lower limbs, to derive blood and ſpirits into them, when they are paralytic; and, laſtly, to remove the ſciatica, and other pains of the joints. The operation in theſe caſes is to be repeated upon the part, till it looks very red, and becomes painful. In Germany and other northern countries, cupping is much oftener joined with ſcarification, than uſed alone; in which caſe the part is firſt to be cupped, till it ſwells and looks red, and the ſkin is to be punctured, or inciſed, by the ſcarifying inſtrument.

CUPRESSUS, the cypreſs tree, one of the ever-greens, and very proper to mix with pines and firs in forming clumps. The wood of the cypreſs is very valuable when grown to a ſize fit for planks, which it will do in as ſhort a ſpace as oaks; therefore, why ſhould this not be cultivated for that purpoſe, ſince there are many places in England, where the ſoil is of a ſandy or gravelly nature, and ſeldom produces any thing worth cultivating? Now, in ſuch places theſe trees would thrive greatly, and greatly add to the pleaſure of the owner, while growing, and afterwards render as much profit to his ſucceſſors as perhaps the beſt plantation of oaks, eſpecially ſhould the timber prove as good here, as in the iſlands of the Archipelago, which there is no reaſon to doubt of: for we find it was ſo gainful a commodity to the iſland of Candia, that the plantations were called *Dos Filiæ*; the felling of one of them being reckoned a daughter's portion. The timber of this tree is ſaid to reſiſt the worm, moth, and all putrefaction; and is ſaid to laſt many hundred years. The doors of St. Peter's church at Rome were framed of this material, which laſted from Conſtantine the Great to pope Eugenius the Fourth's time, which was eleven hundred years, and were then found and entire, when the pope changed them for gates of braſs. The coffins were made of this timber, in which, Thucydides tells us, the Athenians uſed to bury their heroes; and the mummy-cheſts, brought with thoſe condited bodies out of Egypt, are many of them of this wood. This tree is by many learned authors recommended for the improvement of the air, and a ſpecific for the lungs, as ſending forth great quantities of aromatic and balſamic ſcents : wherefore many of the ancient phyſicians of the eaſtern countries uſed to ſend their parents who were troubled with weak lungs, to the iſland of Candia, which at that time abounded with theſe trees, where, from the effects of the air alone, very few failed of a perfect cure.

CURATE properly ſignifies the parſon, or vicar of a pariſh, who has the charge, or cure, of the pariſhioners ſouls.

CURATE alſo implies and is generally uſed for a perſon ſubſtituted by the incumbent to ſerve his cure in his ſtead.

CURCUMA, tumeric, a ſmall tuberous knotty root, brought from the Eaſt-Indies : externally greyiſh, internally of a deep lively yellow or ſaffron colour, which by age changes more and more towards a red. It communicates to water its own deep yellow colour : but to rectified ſpirit of wine, a red. The ſpirituous tincture, applied upon warm marble, gives a durable red ſtain. Woollen cloth, impregnated with a ſolution of alum and tartar, acquires, on being boiled with the watery decoction, an elegant, but not very durable, orange yellow or gold coloured dye. It is rarely made uſe of by the dyers on account of its price and the periſhableneſs of its colour.

CURLING, the coagulating of any fluid body, eſpecially milk.

CURE *of Souls*, a benefice in the Chriſtian church, the incumbent whereof has the direction of conſciences within a pariſh.

CURFEW, or COURFEW, a ſignal given in cities taken in war, &c. to the inhabitants to go to bed. Paſquin ſays, it was ſo called, as being intended to advertiſe the people to ſecure themſelves from the robberies and debaucheries of the night.

The moſt eminent curfew in England was that eſtabliſhed by William the Conqueror, who appointed under ſevere penalties, that, at the ringing of a bell, at eight o'clock in the evening, every one ſhould put out their lights and fires, and go to bed : whence, to this day, a bell, rung about that time, is called a curfew bell.

CURNOCK, a meaſure of corn, containing four buſhels or half a quarter.

CURRAN, or CURRANT, in botany, a genus of plants whoſe characters are well known.

CURRANTS, a ſmall kind of grapes brought principally from Zant and Cephalonia. They are open and pectoral ; but are more uſed in the kitchen than in medicine.

CURRANT, or COURRANT-MONEY, that money which paſſes in commerce from one to another.

CURRENT, in hydrography, a ſtream or flux of water in any direction. Currents, in the ſea, are either natural or general, as ariſing from the diurnal rotation of the earth on its axis ; or accidental and particular, cauſed by the waters being driven againſt promontories, or into gulphs and ſtreights ; where, wanting room to ſpread, they are driven back, and thus diſturb the ordinary flux of the ſea. The currents are ſo violent under the equator, where the motion of the earth is the greateſt, that they carry veſſels very ſpeedily from Africa to America ; but abſolutely prevent their return the ſame way ; ſo that ſhips are forced to run as far as the 40th degree of latitude, to find a paſſage into Europe. In the Streights of Gibraltar, the currents almoſt conſtantly drive to the eaſtward, and carry ſhips into the Mediterranean : they are uſually, too, found to drive the ſame way in St. George's channel. The great violence and dangerouſneſs of the ſea in the Streights of Magellan, is attributed to two contrary currents ſetting in, one from the ſouth, and the other from the north ſea. Dr. Halley makes it highly probable, that in the Downs, in the Streights of Gibraltar, &c. there are under currents, whereby as much water is carried out, as is brought in by the upper currents. This he argues from the offing between the North and South Foreland, where it runs tide and half-tide, i. e. it is either ebb or flood in that part of the Downs three hours before it is ſo off at ſea : a certain ſign, that though the tide of flood runs aloft, yet the tide of ebb runs under-foot, i. e. cloſe by the ground ; and ſo at the tide of ebb it will flow under-foot. This he confirms by an experiment in the Baltic Sound, communicated to him by an able ſeamen preſent at the making it : Being there with one of the king's frigates, they went with their pinnance into the mid-ſtream, and were carried violently by the current. Soon after that, they ſunk a baſket with a large cannon-bullet, to a certain depth of water, which gave check to the boat's motion ; and ſinking it ſtill lower and lower, the boat was driven a-head to the windward, againſt the upper-current ; the current aloft not being above four or five fathom deep. He added, that the lower the baſket was let down, the ſtronger the under-current was found.

From this principal, it is eaſy to account for that vaſt draught of water continually pouring in with the current out of the Atlantic into the Mediterranean, through the Streights of Gibraltar; a paſſage about twenty miles broad; yet without any ſenſible riſing of the water along the coaſt of Barbary, &c. or any overflowing of the lands, which there lie very low.

The method of finding the ſetting and drift of a current is thus: They firſt fix their boat, by throwing out a triangular piece of wood, with a piece of lead faſtened to it, and tied to the ſtem of the boat with a cord, and letting it ſink ſixty fathom, or more; or ſometimes, by a kettle tied to the bowl, and ſunk as the other: by either of theſe means, the boat is brought to ride as at anchor: which done the log is hove, the glaſs turned, and as the log line veers out, the drift of the log is ſet with the compaſs.

This ſhews whether there be any current, or none; and if any, which way it ſets, and at what rate it drives, obſerving, however, to add ſomething to the velocity for the boat's drift; for though ſhe appears to ſtand ſtill, yet, in reality, ſhe is found to move. This addition experience has thus determined; if the line ſhe ride be ſixty fathom, a third part of the drift is to be added; if eighty fathom, a fourth; if an hundred a fifth.

If a ſhip ſail along the direction of a current, it is evident the velocity of the current muſt be added to that of the veſſel: if her courſe be directly againſt the current, it muſt be ſubſtracted; if ſhe ſails athwart the current her motion will be compounded with that of the current, and her velocity augmented, or retarded, according to the angle of her direction with that of the direction of the current, i. e. ſhe will proceed in the diagonal of the two lines of direction, and will deſcribe or paſs through that diagonal in the ſame time wherein ſhe would have deſcribed either of the ſides, by the ſeparate forces.

CURRIERS, thoſe who dreſs leather after it comes from the tan-yard. See *Skinners*.

CURRYING, the method of preparing leather with oil, tallow, &c.

CURSITOR, a clerk belonging to the court of chancery, whoſe buſineſs it is to make out original writs. They are twenty-four in number, making a corporation of themſelves. To each of them is allowed a diviſion of certain counties, into which they iſſue out the original writs required by the ſubject.

CURSOR, in mathematical inſtruments, is any ſmall piece in an equinoctial ring-dial that ſlides to the day of the month.

CURTAIL-DOUBLE, a muſical wind-inſtrument, like the baſſoon, which plays the baſs to the hautboy.

CURTAIN, or CURTIN, in fortification. See *Curtin*.

CURTATE DISTANCE, in aſtronomy, the diſtance of a planet from the ſun to that point where a perpendicular let fall from the planet meets with the ecliptic.

CURTEYN, *Curtana*, king Edward the Confeſſor's ſword, bore before the prince at coronations: its point is ſaid to be broken off, as an emblem of mercy.

CURTIN, CURTAIN, or COURTIN, in fortification, that part of the rampart which is betwixt the flanks of two baſtions bordered with a parapet five feet high, behind which the ſoldiers ſtand to fire upon the covert-way and into the moat.

Angle of the CURTIN, that contained between the curtin and the flank.

CURVATOR COCCYGIS, in anatomy, a name given by Albinus to a muſcle of the coccyx, diſcovered by himſelf, and not deſcribed by any other author.

CURVATURE *of a Line*, is the peculiar manner of its bending, or flexture, by which it becomes a curve of ſuch and ſuch peculiar properties.

CURVES, in geometry, lines which running on continually in all directions, may be cut by a right line in more points than one. The doctrine of curves, and of the figures and ſolids generated by them, conſtitute what we call the higher geometry. Curves are divided into algebraical, or geometrical, and tranſcendental. See *Parabola*, *Diverging*, and *Equation*.

CURVET, or CORVET, in the manege, an air in which the horſe's legs are raiſed higher than in the demivolt; being a kind of leap up, and a little forwards, wherein the horſe raiſes both his fore-legs at once, equally advanced, when he is going ſtraight forward and not in a circle, and as his fore-legs are falling, he immediately raiſes his hind-legs, equally advanced, and not one before the other: ſo that all his four legs are in the air at once; and as he ſets them down, he marks but twice with them.

CURVILINEAR, or CURVILINEAL, figures bounded by curves.

CUSCUTA, dodder, in botany, a genus of plants.

The ancients recommended it as purgative: however, we eſteem it more as an attenuant and aperient in obſtructions of the viſcera, in jaundices, dropſies, and other chronic diſeaſes.

CUSPIDATED PLANTS, in botany, ſuch plants whoſe leaves are pointed like a ſpear.

CUSPIDATED *Hyperbola*, that whoſe points concur in the angle of contact, and there terminate. See *Hyperbola*.

CUSTOM, a term denoting the manners, ceremonies, and faſhions of a people; in which ſenſe it implies ſuch uſages as, though voluntary at firſt, are yet, by practice, become neceſſary. Cuſtom is hence, both by lawyers and civilians, defined *lex non ſcripta*, a law, or right, not written, eſtabliſhed by long uſage, and the conſent of our anceſtors: in which ſenſe it ſtands oppoſed to the *lex ſcripta*, or the written law.

CUSTOMS, the tribute or toll paid by merchants to the king, for goods exported or imported: they are otherwiſe called duties. See *Duty*.

CUSTOM-HOUSE, an office eſtabliſhed by the king's authority in maritime cities, or port towns, for the receipt and management of the cuſtoms and duties of importation and exportation, impoſed on merchandiſes.

CUSTOM-OFFICERS ſhall not have any ſhips of their own, nor may they uſe merchandiſe, factorage, nor keep a tavern.

CUSTOMARY TENANTS, in law, ſuch tenants as hold by the cuſtom of the manor, as their ſpecial evidence. Theſe were anciently bond-men, or ſuch as held *tenura bondagii*.

CUSTOS BREVIUM, the principal clerk belonging to the court of Common-pleas, whoſe buſineſs it is to receive and keep all the writs made returnable in that court, filing every return by itſelf: and at the end of each term, to receive of the prothonotaries all the records of the Niſi Prius, called the poſteas.

CUSTOS ROTULORUM, an officer who has the cuſtody of the rolls and records of the ſeſſions of peace, and of the commiſſion of the peace itſelf.

CUTANEUS, in general, an appellation given to whatever belongs to the cutis, or ſkin: hence we meet with cutaneous caruncles, diſorders, eruptions, &c. See the articles *Caruncle*, *Cutis*, *Cuticle*, *Itch*, &c.

CUTICLE, *Cuticula*, in anatomy, a thin membrane, cloſely lying upon the ſkin, or cutis, of which it ſeems a part, and to which it adheres very firmly, being aſſiſted by the intervention of the corpus reticulare.

CUTICULAR, the ſame with cutaneous. See *Cutaneous*.

CUTIS, the ſkin, in anatomy, the univerſal integument of the body, or a ſubſtance made up of ſeveral kinds of tendinous, membranous, vaſcular, and nervous fibres, the intertexture of which is ſo much the more wonderful, as it is difficult to unfold. This texture is what we commonly call leather, and it makes the body of the ſkin. It is not eaſily torn, may be elongated in all directions, and afterwards recovers itſelf: on the poſterior parts of the body it is thicker and more lax than on the fore-parts, and on the palms of the hands and ſoles of the feet, it is both very thick and very ſolid.

Beſides ſeveral continual openings in the ſkin, it is perforated by an infinite number of ſmall holes, called pores, which are of two kinds; ſome are more or leſs perceivable by the naked eye, ſuch as the orifices of the milky ducts of the mammæ, the orifices of the excretory canals of the cutaneous glands, and the paſſages of the hairs.

The other pores are imperceptible to the naked eye, but viſible through a microſcope; and their exiſtence is likewiſe proved by the cutaneous tranſpiration, and by the effect of topical applications; and from theſe two phænomena they have been divided into arterial and venous pores.

The outſide of the ſkin is covered by a thin tranſparent web, cloſely joined to it, which is called epidermis, cuticula, or ſcarf ſkin.

The uſes of the ſkin are numerous: 1. To ſurround, cover, and defend the parts that lie underneath it. 2. To be the organ of feeling. 3. To be an univerſal emunctory to the body, cleanſing the blood of its redundancies, by the means of ſweat and perſpiration; while theſe, at the ſame time ſerve to prevent the acidity or drineſs of the cutis itſelf.

CUTLER, an artificer, whoſe buſineſs it is to forge, temper, and mount all ſorts of knives, razors, ſhears, ſciſſars, ſurgeons inſtruments, and ſword-blades.

CUTTER, in naval affairs, a ſmall veſſel uſed to navigate in the channel of Enland:

gland : they have commonly one maſt, are rigged as ſloops, and are employed in the king's ſervice to catch ſmugglers.

CUTTING, in heraldry, the dividing a ſhield into two equal parts, from right to left, parallel to the horizon, or in the feſſe-way.

CUTTING, in painting, the laying one ſtrong lively colour over another, without any ſhade or ſoftening. This hath always a diſagreeable effect.

CUTTING, in ſurgery, operation of extracting the ſtone out of the human body.

CUTTING *in Wood*, a particular kind of ſculpture, or engraving, denominated from the matter whereon it is employed. The ingenious art of cutting in wood was certainly carried to a very great height about one hundred and ſixty years ago : but at preſent it is in very low eſteem, having been long neglected, and the application of artiſts almoſt wholly employed on copper.

CUTTING OF SLIPS, in gardening, the branches or ſprigs of trees, or plants, cut or ſlipped of, to ſet again, which is done in moiſt fine earth. The beſt time for this operation is from the middle of Auguſt to the middle of April. If done in the ſpring, let them not fail of water in the ſummer. In providing them, ſuch branches as have burs, knobs, or joints, are to be cut off two or three inches beneath the burs, &c. and the leaves are to be ſtripped off ſo far as they are placed in the earth, leaving no ſide branch : ſmall top ſprigs of two or three years growth, are the beſt for this operation.

CUT-WATER, in naval architecture. See *Stem*.

CYANUS, the blue-bottle in botany, a diſtinct genus of plants, according to Tournefort, but is comprehended by Linnæus among the centauria. This plant is an alexipharmic and uterine. It is ſaid to be of uſe alſo in the king's evil, in palpitations of the heart : and a water diſtilled from it, is of ſervice in an inflammation of the eyes, &c.

* CYBELE, in Pagan Mythology, the daughter of Cœlus and Terra, and the wife of her brother Saturn was alſo called Magnatur. Thus, under the character of the elder veſta, ſhe was repreſented ſitting, to denote the ſtability of the earth ; ſhe had a drum in her lap to ſignify the earth's cavity, and the winds impriſoned in it : her head was crowned with towers, and ſhe was ſurrounded with animals of various kinds ſporting about her, to expreſs her fruitfulneſs and bounty. But under the character of Cybele, ſhe made a more magnificent appearance, being crowned with towers, ſeated in a golden chariot drawn by lions, cloathed with a robe wrought with flowers, and holding a key in her hand. Her parents afterwards owned her, and ſhe fell in love with Aytis, by whom conceiving, her father cauſed her lover to be ſlain, upon which Cybele ran mad, and filled the woods with her lamentations. Soon after a plague and famine laying waſte the country, the oracle was conſulted, who adviſed them to bury Atys with great pomp, and to worſhip Cybele as a goddeſs. On which they erected a temple to her honour, and placed lions at her feet, to denote her being educated by thoſe animals. All the prieſts of Cybele were eunuchs.

CYCLE, in chronology, a certain period or ſeries of numbers, which regularly proceed from the firſt to the laſt, and then return again to the firſt, and ſo circulate perpetually.

CYCLE *of the Sun*, a revolution of 28 years, which being elapſed, the dominical or Sunday letters return to their former place, and proceed in the ſame order as before, according to the Julian calendar. But the reformation made therein by pope Gregory, has occaſioned a conſiderable alteration in this cycle : becauſe every hundredth year is common, conſiſting only of 365 days, whereas according to the Julian account, it is biſſextile, conſiſting of 366 days. To find the year of this cycle for any year of the Chriſtian æra, add nine to the current year of Chriſt, becauſe the cycle commenced nine years before the Chriſtian æra, and divide the ſum by 28 ; the quotient will ſhew the number of cycles which have revolved ſince the firſt year before Chriſt, and the remainder, if any, will ſhew the current year of the cycle ; but if there be no remainder, it ſhews that it is the laſt or twenty-eighth year of the ſolar cycle. Hence the year of the cycle being known, the dominical letter, according to the Julian account, is eaſily found. But, as we have already obſerved, the ſeries will be interrupted in the Gregorian calendar, becauſe every fourth year is not Biſſextile, as in the Julian acconnt ; therefore a table of this kind will not point the dominical letters, according to the new ſtile, but for that century of years, for which the table is calculated. See *Dominical Letter*.

CYCLE *of the Moon*, called alſo the golden number, and the Metonic cycle, from its inventor Meton, the Athenian is a period of 19 years, which when they are completed, the new moons and full moons return on the ſame days of the month, ſo that on whatever days the new and full moons fall this year, nineteen years hence they will happen on the very ſame days of the month, though not at the ſame hour, as Meton and the fathers of the primitive church thought; and therefore, at the time of the council of Nice, when the method of finding the time for the obſerving the feaſt of Eaſter was eſtabliſhed, the numbers of the lunar cycle were inſerted in the calendar, which, upon the account of their excellent uſe, were ſet in golden letters, and the year of the cycle called the golden number of that year, which how to find, take the following rule:

Add one to the year of our Lord, and divide by 19, the remainder is the current year of this cycle, or golden number; but if nothing remain, it ſhews that it is the laſt year of the cycle, and, conſequently, the golden number is 19.

CYCLOID, in geometry, one of the mechanical, or, as others term them, tranſcendental curves; called alſo the trochoid.

CYCLOIDAL, ſomething belonging to a cycloid. Hence the cycloidal ſpace is the area bounded by the cycloid and its ſubtenſe.

CYCLOPÆDIA, or ENCYCLOPÆDIA. See *Encyclopædia.*

CYDER, or CIDER, an excellent drink made of the juice of apples, eſpecially the more curious kinds; the juice of theſe being eſteemed more cordial and pleaſant than that of the wild harſh kinds; and as it will not we preſume, be diſagreeable to the reader, we ſhall here give the method of making this liquor in Devonſhire.

In order to this, it is to be obſerved,

1. That all the promiſcuous kinds of apples that have dropped from the trees, from time to time, are to be gathered up and laid in a heap by themſelves, and to be made into cyder, after having ſo lain about ten days.

2. Such apples as are gathered from the trees, having already acquired ſome degree of maturity, are likewiſe to be laid in a heap by themſelves for about a fortnight.

3. The latter hard fruits, which are to be left on the trees till the approach of froſt is apprehended, are to be laid in a ſeparate heap, where they are to remain a month or ſix weeks, by which, notwithſtanding froſt, rain, &c. their juices will receive ſuch a maturation, as will prep[illegible] them for a kindly fermentation, and which they could not have attained on the trees by means of the coldneſs of the ſeaſon.

It is obſervable, that the riper and mellower the fruits are at the time of collecting them into heaps, the ſhorter ſhould be their continuance there; and on the contrary, the harſher, immaturer, and harder they are, the longer they ſhould reſt.

Theſe heaps ſhould be made in an even and open part of an orchard, without any regard to covering from rain, dews, or what elſe may happen during the apples ſtaying there; and whether they be carried in and broke in wet or dry wheather, the thing is all the ſame. If it may be objected, by ſome, that during their having laid together in the heap, they may have imbibed great humidity, as well from the air as from the ground, rain, dews, &c. which are mixed with their juices; the anſwer is, this will have no other effect than a kindly diluting natural to the fruit, by which means a ſpeedier fermentation enſues, and all heterogeneous humid particles are thrown off.

The apples are then ground, and the pummice is received in a large open-mouthed-veſſel, capable of containing as much thereof as is ſufficient for one making, or one cheeſe. Though it has been a cuſtom to let the pummice remain ſome hours in the veſſel appropriated to contain it, yet that practice is by no means commendable; for if the fruits did not come ripe from the trees, or otherwiſe matured, the pummice, continuing in the vat too long, will acquire ſuch harſhneſs and coarſeneſs from the ſkins as is never to be got rid of; and if the pummice is of well ripened fruit, the continuing it too long there will occaſion it to contract a ſharpneſs that very often is followed with want of ſpirit and pricking; nay ſometimes it even becomes vinegar, or always continues of a wheyiſh colour; all which proceeds from the height of fermentation that it almoſt inſtantly falls into on lying together; the pummice therefore ſhould remain no longer in the vat, than until there may be enough broke for one preſſing, or that all be made into a cheeſe, and preſſed the ſame day it is broken.

When the cyder is preſſed, and cleared from any impurities by ſtraining it through a hair ſieve, it is placed in a proper caſk to be fermented. See *Fermentation.*

CYGNUS, in aſtronomy, a conſtellation of the northern hemiſphere, conſiſting of 17 ſtars according to Ptolomey's catalogue, of 19 in Tycho's, and in the Britannic catalogue of 107.

CYLINDER, in geometry, a ſolid. The ſection of every cylinder by a plane oblique to its baſe is an ellipſis.

The ſuperfices of a right cylinder is equal to the periphery of the baſe, multiplied into the length of its ſide.

The ſolidity of a cylinder is equal to the area of its baſe, multiplied into its altitude.

Cylinders of the ſame baſe, and ſtanding between the ſame parallels, are equal.

Every cylinder is to a ſpheroid inſcribed in it, as 3 to 2.

If the altitudes of two right cylinders be equal to the diameters of their baſes, thoſe cylinders are to one another as the cubes of the diameters of their baſes.

We have obſerved under the article CIRCLE, that if the diameter of any circle be multiplied by 3.14159,26536—, the product will be the circumference; and ſince every cylinder may be conſidered as made of an infinite number of equal circles, it follows, that as 1, to 3.14159,26536—, ſo is the diameter of any cylinder multiplied by the height, to the ſuperfices of the cylinder; wherefore, if the product of the height of the cylinder into the diameter be multiplied by 3.14159,26536—, the product will give the ſuperficies of the cylinder.

And hence it alſo follows, that the ſolidity of any cylinder is found by multiplying the area of its baſe by its height or altitude: putting therefore *r* for the radius of the baſe, *c* for the circumference, and *a* for the altitude, we ſhall have $\frac{c\,r\,a}{2} =$ the ſolidity. But if the altitude be equal to the diameter, then the ſolidity will be $\frac{c\,r}{2} \times 2\,r = c\,r\,r$,

And becauſe as 1, to 78539,81634—; ſo is the ſquare the diameter of any circle its area. See *Circle.*

CYLINDER-CHARGE, in gunnery, that part of a great gun which is poſſeſſed by the powder and ball.

CYLINDER CONCAVE, in gunnery, all the chace of a piece of ordnance.

CYLINDER VACANT, in gunnery, that part of the hollow that remains empty, after the gun is charged.

CYLINDRICAL, in the form of, or reſembling, a cylinder, as, a cylindrical column, cylindrical compaſſes, mirrors, &c.

CYLINDROID, in geometry, a ſolid body approaching to the figure of a cylinder, but differing from it in ſome reſpect, as having the baſes elliptical, but parrallel and equal.

CYMATIUM, in architecture, a member, or moulding, of the corniche, the profile of which is waved; that is, concave at top, and convex at bottom. See *Corniche.*

CYMBAL, a muſical inſtrument in uſe among the ancients. The cymbal was round, made of braſs, like our kettle-drums, and, as ſome think, in their form, but ſmaller, and of different uſe.

CYNARA. See the article *Artichoke.*

CYNICS, a ſect of ancient philoſophers, who valued themſelves upon their contempt of riches and ſtate, arts and ſciences, and almoſt every thing, except virtue or morality.

CYNIC SPASM, a kind of convulſion, wherein the patient imitates the howlings of dogs.

CYNOGLOSSUM, hound's tongue, in botany, a genus of plants, the root of which is kept in the ſhops, and is eſteemed a pectoral and narcotic.

Some recommend it in catarrhs, the gonorrhœa, and ſcrophulous caſes.

CYNOSURA, in aſtronomy, a name given by the Greeks to the conſtellation of urſa minor. See *Urſa.*

This is the conſtellation next to the north pole.

CYNOSURUS, dog's-tail graſs, in botany, a genus of plants, whoſe corolla conſiſts of two valves; the exterior concave, longer, and ariſtated; the interior, plane, without any ariſta: the corolla ſurrounds the ſeed, which is ſingle, of an oblong figure, and pointed at each end.

CYON. See *Cion.*

CYPHER. See *Cipher.*

CYPRESS, *Cypreſſus,* the Engliſh name of a genus of trees. See *Cupreſſus.*

CYPRINUS, in ichthyology, a very numerous genus of fiſhes, comprehending the roach, tench, carp, gudgeon, barbel, chub, bream, bleak, &c.

CYRENAICS, *Cyrenaici,* a ſect of ancient philoſophers, ſo called from their founder, Ariſtippus of Cyrene, a diſciple of Socrates. The great principle of their doctrine was, that the ſupreme good of man in this life is pleaſure; whereby they not only meant a privation of pain and a tranquillity of mind, but an aſſemblage of all mental and ſenſual pleaſures, particularly the laſt.

CYST, the bag, or tunic, including all incyſted tumours, as the ſchirrhus, atheroma, &c. See *Schirrhus, Atheroma, &c.*

If in extracting an inceſted tumour, the including cyſt be broke, or wounded, care muſt be taken to remove it, otherwiſe the tumour will ſpeedily return. See *Encyſted Tumours*.

Indeed if the tumour be a ſchirrhus, ſarcoma, ſteatoma, or in a glandular part, the contents are hard enough to make a clean extirpation of it, notwithſtanding its including coats be wounded: but when the matter of the tumour is ſoft or fluid, by its eſcaping, the tumour will become flaccid, ſo that it will hardly be poſſible to make a clean extirpation of the cyſt, without leaving ſome fragment behind, which muſt in that caſe be brought away by dreſſing the abſceſs with digeſtives, &c. See *Abſceſs*.

CYSTIC, a name given to two arteries and two veins opening into the gall-bladder.

CYSTIC DUCT, *Cyſticus Ductus*, a pipe that goes into the neck of the cyſtis, or gall bladder.

CYSTIC BILE, one of the two kinds of bile, being diſtinguiſhed into the cyſtic and hepatic bile. The cyſtic bile is very bitter, thicker, and more coloured than the hepatic.

CYSTIS, in anatomy, the ſame with veſicula, or bladders. See *Bladder* and *Veſicula*.

CYSTUS, in botany, a name anciently given to the alkekengi. See *Alkekengi*.

CYTISO-GENISTA, in botany. See *Giniſta.*

CZAR, a title of honour aſſumed by the emperors of Ruſſia. No doubt but this title was taken by corruption, from cæſar, emperor; and accordingly they bear an eagle, as the ſymbol of their empire, and the word CÆSAR in their arms: yet they make a diſtinction between czar and cæſar, the firſt being taken for the king's name, and the other for the emperor's.

End of the FIRST VOLUME.

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